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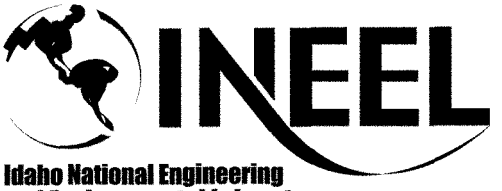
Specification

Project File No. 021052

Backhoe Safety-Related Modifications for the OU 7-10 Glovebox Excavator Method Project

Prepared for:
U.S. Department of Energy
Idaho Operations Office
Idaho Falls, Idaho



Idaho National Engineering and Environmental Laboratory

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5. Author: B. D. Preussner 5. Owner: S. A. Davies
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REVIEW AND APPROVAL SIGNATURES
Denote R for review concurrence, A for approval, as appropriate.

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S. A. Davies	A	7/31/02	Project Engineer
11. Document Control Release Signature:	A	8/05/02	ER DMCS

RECORDS MANAGEMENT

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Specification Environmental Restoration	**BACKHOE SAFETY-RELATED MODIFICATIONS FOR THE OU 7-10 GLOVEBOX EXCAVATOR METHOD PROJECT**	Identifier: SPC-351 Revision: 0 Page: **i** of iv
Document Control Center: (208) 526-0362	Document Owner: Manager, Environmental Restoration Program	Effective Date: 8/01/2002
Manual:		Change Number: N/A

CONTENTS

FIGURES

TABLES

ACRONYMS

AISC	American Institute of Steel Construction
ASNT	American Society of Nondestructive Testing
ASTM	American Society of Testing and Materials
AWS	American Welding Society
C of C	certificate of compliance
CAT	Caterpillar Incorporated
CMTR	Certified Material Test Report
INEEL	Idaho National Engineering and Environmental Laboratory
NDE	nondestructive examination
NDT	Nondestructive Testing
OSHA	Occupational Safety and Health Administration
OU	operable unit
PGS	Packaging Glovebox System
QA	Quality Assurance
RCS	Retrieval Confinement Structure
RFP	Request for Proposal
SAE	Society of Automotive Engineers
SSPC	Steel Structures Painting Council

1. SUMMARY

1.1 Background

Pit 9 is a one-acre pit within the RWMC at the INEEL, averaging 17.5 ft deep, filled in the late 1960s with 3.5 ft of underburden, 7.5 ft of waste with interstitial layers of soil, and a top layer of 3.5 ft of soil overburden.

Excavating the pit consists of removing the 3.5 ft of overburden, placing the soil in 4x4-ft sacks, and removing the sacks from the Retrieval Confinement Structure before excavating the waste zone. Following the overburden removal, waste materials around the existing ground probes are removed and placed on transfer carts for processing in the Packaging Glovebox System units shown in Figure 1. Excavation continues until the underburden is reached. Following excavation, core samples of the underburden are taken and bagged out of the Retrieval Confinement Structure. Pit closure consists of filling the residual pit volume with a light grout. All contaminated material in the pit is buried to a minimum depth of 3 ft in the light grout.

The Glovebox Excavator Method Project will use a new Caterpillar 446B backhoe and all new associated end effectors.

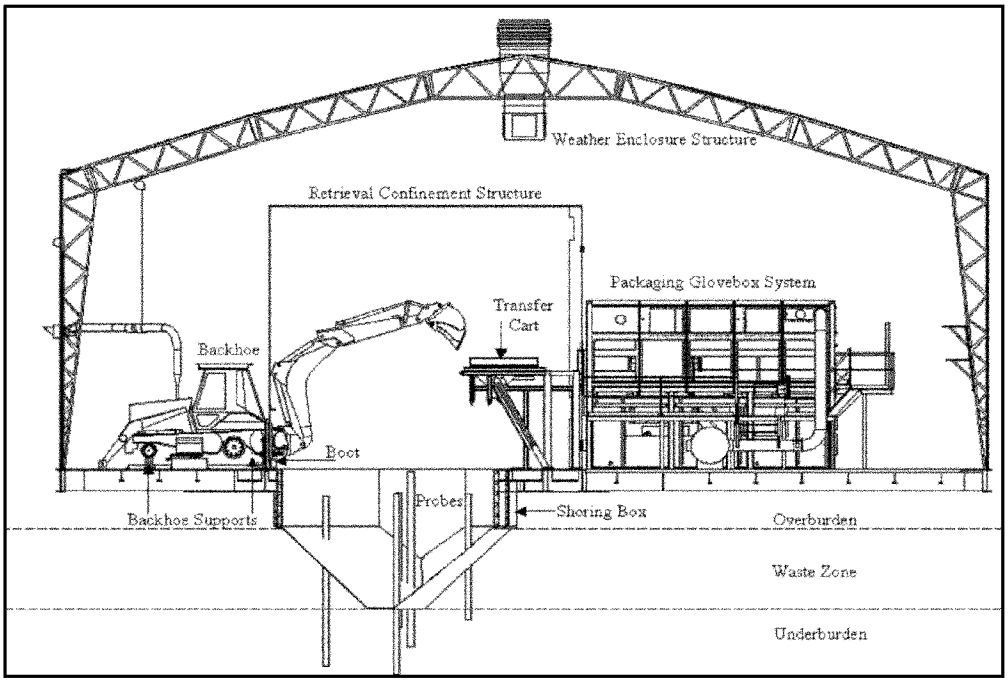

Figure 1. Cross section of the Glovebox Excavator Method Project facility.

1.2 Work Included

This specification covers the subcontractor requirements for the fabrication and installation of the backhoe internal boot (Drawing 519902), external boots (Drawings 519859 and 519903), bulkhead fitting components (Drawing 519931), swing stop shims (Drawing 522045), and anchorage structures (Drawing 519906). Some of the dimensions on the internal boot plates must be determined from the dimensions of the actual backhoe at the time of fabrication and installation. These dimensions are listed on the drawings with a note reading, "Field verify dimensions before fabrication, and make adjustments if needed."

Only the following items from Drawing 519931 shall be supplied and installed on the internal boot (as shown in Drawing 519931):

- 519931-39 @ 13
- 519931-17 @ 11
- 519931-18 @ 2
- 519931-15 @ 13
- 519931-20 @ 13
- 519931-21 @ 13

These items shall be torqued to 20 ± 2 ft-lb.

The swing stop shims and the anchorage items that are not installed on the backhoe, (two items, Drawing 519906-5, front adjustment assemblies, are installed on the backhoe) shall be shipped with the backhoe.

The two front adjustment assemblies (Drawing 519906-5) shall be installed on the backhoe to replace the front loader arm lift cylinders. They shall be adjusted to support the loader arm ends approximately 2 ft off the ground.

The following shall be performed by the subcontractor and delivered to Western States Equipment (Pocatello, ID) after BBWI inspection:

1. Fabricate and install a complete internal boot assembly on a 446B backhoe in accordance with contractor drawings 519902.

2. Purchase/fabricate/install bulkhead fittings and components as listed above from drawing 519931.

3. Fabricate and install a complete external boot assembly on the 446B backhoe in accordance with Drawings 519859 and 519903.

4. Purchase/fabricate/install the two bulkhead feed-through receptacles and associated components (Drawing 519903 items 26, 27, and 28) and one hex coupling (Drawing 519903 item 25) onto the external boot assembly. The two bulkhead feed-through receptacles shall be torqued to 20 ± 2 ft-lb.

5. Fabricate and install swing stop shims, associated screws, and drilled and tapped holes in the backhoe boom swing stop plates shown on Drawings 522045 and 519903.

6. Fabricate all anchorage structures on Drawing 519906.

7. Fabricate an additional gasket per Drawing 519859 (item 29) to be placed loosely around the frame between the seal and the backhoe cab for gasket replacement purposes.

8. Provide vendor data submittals in accordance with vendor data schedule and this specification.

1.3 Work Not Included

Unless specified, the subcontractor does not supply equipment. The following items shall not be included in the subcontractor's scope of work.

- Removing hydraulic system and associated parts for installation of boot assemblies.

- Reinstalling hydraulic system and associated parts (following boot installations) except as noted on drawings.

- Installing the anchorage structures (Drawing 519906) onto the backhoe.

1.4 INEEL-Furnished Materials, Equipment, and Services

The INEEL will furnish the 446B backhoe loader.

2. APPLICABLE CODES, PROCEDURES, AND REFERENCES

The following documents form a part of this specification to the extent specified herein and as applicable. Unless otherwise specified, the issue in effect on the date of invitation to bid shall apply. In case of conflict between the documents referenced here and the contents of this specification, the contents of this specification shall be considered a superseding requirement.

2.1 National and Local Codes

Occupational Safety and Health Administration (OSHA)

29 CFR Part 1910 Occupational Safety and Health Standards

2.2 Industry Standards and DOE Orders

American Institute of Steel Construction (AISC) Manual of Steel Construction

American Society of Testing and Materials (ASTM)

A36M-01	Standard Specification for Carbon Structural Steel
A449-00	Standard Specification for Quenched and Tempered Steel Bolts and Studs
A1011/A1011M-02	Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High Strength Low-Alloy and High Strength Low-Alloy With Improved Formability.
A325-02	Standard Specification for Structural Bolts, Steel, Heat Treated 120/105 ksi Minimum Tensile Strength
F436-93	Standard Specification for Hardened Steel Washers
D-2000	Standard Classification System for Rubber Products
A108-99	Standard Specification for Steel Bars, Carbon, Cold-Finished, Standard Quality
A576-90b	Standard Specification for Steel Bars, Carbon, Hot-Wrought, Special Quality

American Society of Nondestructive Testing (ASNT)

ASNT-TC-1A	Qualification and Certification of Nondestructive Personnel

American Welding Society (AWS)

ANSI/AWS A2.4-98	Standard Symbols for Welding, Brazing, and Non-Destructive Examination
ANSI/AWS D1.1	Structural Welding Code-Steel
ANSI/AWS D9.1	Sheet Metal Welding Code
ANSI/AWS D14.1-97	Specification for Welding of Industrial and Mill Cranes and Other Material Handling Equipment

2.3 Military (National) Specifications

None identified.

2.4 Related Specifications

None identified.

2.5 References

None identified.

3. TECHNICAL REQUIREMENTS

3.1 General

Materials and Requirements

See attached contract drawings.

Manufacturer Part Numbers

See attached contract drawings.

3.2 Restrictions

None identified.

3.3 Performance Requirements

Some of the dimensions on the internal boot members must be determined from the dimensions of the actual backhoe at the time of fabrication and installation. These dimensions are listed on the drawings with a note reading "Field verify dimension prior to fabrication and make adjustments if needed."

These dimensions shall be determined so that after welding, all items on the drawing and the entire length of weld shall be a continuous seal weld between the plates or between the plates and backhoe frame.

3.4 Software

Not applicable.

3.5 Registered Professional Engineer Certification

Not applicable.

3.6 Human Factors

Not applicable.

3.7 Reliability and Maintainability

Not applicable to subcontractor.

3.8 Environmental Regulatory Requirements and/or Site and Operating Requirements

Not applicable.

3.9 Natural Phenomena Requirements

Not applicable.

4. ENVIRONMENTAL, SAFETY, AND HEALTH REQUIREMENTS

4.1 Subcontractor Safety

The subcontractor shall work in accordance with applicable Occupational Safety and Health Administration requirements as stated in 29 CFR 1910.

4.2 Personal Protective Equipment

The subcontractor shall determine and require use of appropriate personal protective equipment for all tasks performed.

4.3 Emergency Response

Not applicable.

4.4 Accident Investigation

Not applicable.

5. MANUFACTURING AND ASSEMBLY

5.1 General

The backhoe inner boot, outer boot, swing boom physical stops, bulkhead fittings, and front adjustment assemblies shall be assembled and installed onto a 446B backhoe, in the subcontractor's shop, to ensure proper fits. The contractor's technical representative or alternate will inspect all testing of the assembled final product. Assembly of the equipment shall be made in a clean area of the subcontractor's facility. Materials shall be as specified on contract drawings.

5.2 Prohibitions

None identified.

5.3 Material

Standard Parts

See attached contract drawings.

Structural

Not applicable.

Hardware

See attached contract drawings.

Other Materials

See attached contract drawings.

Painting

Exterior surfaces shall be as smooth and crevice-free as practical. The paint should be a smooth coat that is easily cleaned of contamination. See Section 6.5.2 for paint coatings.

Chemical and Physical Test Reports

Actual chemical test reports shall be furnished for all weld filler materials, plates, and structural members. A certificate of conformance shall be supplied that covers all materials provided in the scope of this specification.

5.4 Fabrication

All components shall be fabricated in conformance with the contractor's drawings and as specified herein. A manufacturing/inspection/test plan shall be submitted to the contactor before fabrication release. The plan shall detail the fabrication, assembly, installation, inspection, examination, and test process to be performed. The plan shall be submitted for approval before supplier initiation of any manufacturing, inspection, or test activities, for incorporation of contractor source inspection hold points.

The subcontractor shall provide the contractor with as-built redlined markups of all approved changes to the contractor drawings. The redlined drawings shall be transmitted to the contractor before shipment of the equipment.

Welding

Welding and welding inspection shall be performed in accordance with the contractor's drawings. Weld procedures, welder qualifications, nondestructive testing (NDT) methods, and NDT inspector qualifications

shall be submitted to the contractor for approval before performing any welding. Wherever stress relieving is required to maintain dimensional requirements, it shall be done before machining. Finished weld surfaces shall be free of defects. Welds being ground must be kept cool at all times to minimize distortion and discoloration. The original material thickness shall be maintained after all grinding and polishing processes.

Finish and Fit

All mill and fabrication markings must be removed, (i.e., center punch marks, scribe lines, and stampings). All exposed surfaces shall be free of sharp edges, cracks, pits, oxides, embedded slag, burns, weld splatter, sharp ridges, grooves, tool marks, or any other surface irregularities. All parts shall be free of burrs and sharp edges. All components drilled or machined shall be deburred and cleaned after the work is completed. All fits shall be made without using shims, unless specified on the drawings, and where fits can be made without stressing or forcing components or materials beyond where such force fits are specified.

5.5 Equipment Tagging

All materials supplied but not attached to the backhoe shall be marked and tagged with its drawing and item.

5.6 Cleaning, Painting, and Coating

5.6.1 Cleaning

All surfaces shall be cleaned for removal of weld flux, oil, grease, shop soil, and visible rust. Methods may include cleaning by hot water spray or solvent wiping. The final wash and rinse shall be accomplished with fresh water. Cleanliness shall meet the approval of the contractor at the time of final inspection. The subcontractor's cleaning procedures shall be submitted for the contractor's approval before fabrication.

5.6.2 Painting/Coating

- Surface Preparation and Painting. External corrosion-resistant surfaces shall be prepared and coated in accordance with this section. Surfaces to be painted shall be abrasive blast cleaned in accordance with Steel Structures Painting Council (SSPC)-SP6.

- Materials. The coating materials shall be applied in accordance with paragraph 3.5 of Steel Structures Painting Council-PA1 as supplemented by the coating manufacturer's recommendations. The coating system shall consist of a prime and finish coat using the coating systems listed below in Table 1, or a contractor-approved equivalent:

Table 1. Coating system prime and finish coat.

Manufacturer	Primer	Finish
Keeler and Long	No.6040 (Tri-Polar Primer)	P-Series (Poly-Silicone Enamel) Copolymerized Silicone-Alkyd Enamel Light Gray 5504

Film thickness, test, and acceptance criteria shall be shown on American Society of Testing and Materials D5144, Standard Guide for Use of Protective Coating Standards in Nuclear Power Plants.

- Standard Components Color. Type of paint and color of final coat shall be in accordance with the contractor drawings.

  One quart of each different color paint shall be provided for field touch-up. Complete surface preparation and application instructions shall be provided with the touch-up material.

5.7 Spare Parts

None to be provided.

5.8 Other Processes

Not applicable.

6. SUBMITTALS

6.1 General Submittal Requirements

General Procedures

Vendor data, whether prepared by the subcontractor or subcontractor's subtier or supplier, shall be submitted as instruments of the subcontractor. Therefore, before submittal, the subcontractor shall ascertain that material and equipment covered

by the submittal and the contents of the submittal itself meet all the requirements of the subcontract specifications, drawings, or other contract documents.

Each submittal shall contain identification for each separable and separate piece of material or equipment. Literature (with respect to this information provided in the specification and on the vendor data schedule) shall be provided. Submittals shall be numbered consecutively for each different submittal.

Vendor Data Schedule

Vendor data required by the specification sections are identified on the vendor data schedule. The vendor data schedule provides a tabular listing by item number, drawing or specification reference, and description of the item or service. The type of submittal is identified by a vendor data code, and the time required to submit the item is identified by a "when to submit" code. An approval code specifies whether the submittal is for mandatory approval or for information only. One copy of routine paper or electronic file submittals is required; additional copies may be required by the vendor data schedule. Electronic file submittals are preferred.

Vendor Data Transmittal and Disposition Form 431.13

All vendor data shall be submitted to the contractor using the vendor data transmittal and disposition form. The form provides the subcontractor a method to submit vendor data and provides the contractor a means of dispositioning the submittal. The subcontractor shall list the vendor data schedule item number, a vendor data transmittal tracking number (if applicable), the drawing or specification number reference, a tag number (if applicable), the submittal status (e.g., mandatory approval, information only, or resubmittal), the revision level, and the item description. The description should be complete enough that a person unfamiliar with the project can determine what the submittal includes.

Disposition by the Contractor

The contractor's comments and required action by the subcontractor will be indicated by a disposition code on the submittal. The disposition codes will be classed as follows:

A. **Work may proceed.** Submittals so noted will generally be classed as data that appears to be satisfactory without corrections.

B. **Work may proceed with comments incorporated. Revise effected sections and resubmit entire submittal.** This category will cover data that, with the correction of comments noted or marked on the submittal,

appear to be satisfactory and require no further review by the contractor before construction.

C. **Work may NOT proceed. Revise and resubmit.** Submittals so dispositioned will require a corrected resubmittal for one of the following reasons:

1. Submittal requires corrections, shown on comments, before final review.

2. Submittal data incomplete and requires more detailed information before final review.

3. Submittal data does not meet subcontract document requirements.

D. **Accepted for use. Information only submittal.** Submittals so dispositioned will generally be classified as information only for as-specified material and equipment.

Mandatory approval coded vendor data will be reviewed by the contractor and receive an A, B, or C disposition. Information only submittals without comments will receive a D disposition. A, B, and C coded dispositioned submittals will be returned to the subcontractor. D dispositioned submittals will not be returned to the subcontractor. The contractor may provide internal review of information only submittals. In the event that comments are generated on an information only submittal, the submittal may be dispositioned B or C and returned to the subcontractor for appropriate action. Acknowledgment of receipt of dispositioned vendor data by the subcontractor will not be required.

The contractor will return dispositioned submittals with reasonable promptness. The subcontractor shall note that a prompt review is dependent on timely and complete submittals in strict accordance with these instructions.

6.2 Spare Parts and Special Tools List

The subcontractor shall submit to the contractor a list of any recommended special tools required for installing the fittings and fitting components associated with the internal boot and external boot.

6.3 Operations and Maintenance Manuals

Not applicable.

6.4 Drawings

The equipment supplier shall submit redlined drawings on the contractor drawings disclosing the configuration of the internal boot, external boot, swing stop shims, anchorage structures, and all associated hardware as built. These drawings shall document the mechanical configuration. The drawings shall be of sufficient detail to allow the contractor to identify and evaluate the systems and components for installation, operation, maintenance, and repair activities without detailed physical inspection of the actual hardware.

6.5 Software

Not applicable.

6.6 Weld History

Weld Procedures

Welding procedures shall be in accordance with the contractor drawings. A copy of the weld procedures to be used in this work shall be submitted to INEEL for approval before fabrication.

Weld Map

A weld map shall be submitted to the contractor and shall include the following information: weld procedure specification, NDE requirements and unique identification number including welder's identification, completion date, and reference to inspection report.

Weld Repair Procedures

Weld repair procedures shall be in accordance with the codes and standards specified for the welds on the contractor drawings. A copy of the weld repair procedures to be used in this work shall be submitted to INEEL for approval before fabrication.

Welder Qualifications

All welder qualifications and qualification procedures shall be in accordance with the codes and standards specified for the welds on the contractor drawings. Copies of welder qualifications shall be submitted to INEEL for approval before fabrication.

Nondestructive Examination Procedures and Personnel Qualifications

Visual examination and liquid penetrant testing shall be performed in accordance with contractor drawings. All nondestructive examination (NDE) procedures and inspector qualifications shall be submitted to INEEL for approval before fabrication.

Certified Material Test Reports

Certified Material Test Reports (CMTRs) shall be provided for all weld filler material, steel plates, steel sheets, and structural members. CMTRs shall be submitted to INEEL for approval before fabrication.

6.7 Certificate of Conformance

A Certificate of Conformance (C of C) shall be provided to INEEL for all parts purchased or constructed to this specification with shipment of the part.

6.8 Commercial Grade Item Dedication

The subcontractor shall notify the contractor upon receipt of items 519903-25, 519903-26, 519931-17, 519931-18, 519931-20, and 519931-21, for Contractor commercial grade dedication.

7. QUALITY ASSURANCE

7.1 Minimum Qualifications of Manufacturer, Supplier, or Personnel

- Welders performing work covered in this specification shall be in accordance with AWS D 9.1.

- Subcontractor shall have a quality assurance (QA) program that implements ASME NQA-1 1997. Applicable QA program elements will be identified in INEEL NQA-1 Applicability Matrix, included in the procurement documents.

7.2 QA Program

American Society of Mechanical Engineers (ASME) NQA-1-1997 is applicable to the scope of work identified in this document. Specific criteria for implementation are listed in the ASME NQA-1 Applicability Matrix.

7.3 Nondestructive Examination

Weld Inspections and Examinations

Visual examination will be performed for workmanship and of all materials and components of the structure, as specified. Visual examination of welding will be performed in accordance with the contractor drawings. Personnel performing visual examination of welds shall have current certification as an American Welding Society certified welding inspector in accordance with the provisions of AWS QC1, Standard and Guide for Qualification and Certification of Welding Inspectors.

Personnel performing nondestructive testing other than visual examination of welds shall be qualified in accordance with the American Society for Nondestructive Testing Recommended Practice No. SNT-TC-1A.

Liquid penetrant examination shall be performed in accordance with ASME B&PV Code Section V Article 6. Acceptance criteria for this examination shall be performed as delineated on contractor drawings.

7.4 Operational Testing

Not applicable.

7.5 Special Processes

Not applicable.

7.6 Certificate of Conformance

A C of C shall be provided to INEEL for all parts constructed or shown on this specification and the contractor drawings identified herein. This certificate shall state that the part has been procured, fabricated, cleaned, and inspected shown on this drawing, specification, and any buyer-approved changes, and that the final product fully complies with all technical requirements of these documents. A qualified representative of the subcontractor shall sign the C of C (use INEEL form 540.04).

8. PACKAGING AND SHIPPING

8.1 Packing and Packaging

446B Backhoe

The subcontractor shall prepare the 446B backhoe for shipping. As a minimum, the backhoe shall be securely anchored during transport and the backhoe boom (if present) shall be locked in the upright position and secured.

Swing Stop Shims

The subcontractor shall prepare for shipping the swing stop shims that are not attached to the backhoe. As a minimum, the swing stop shims shall be packaged in such a way as to prevent damage during shipment.

Anchorage Structures

The subcontractor shall prepare for shipping all anchorage structures that are not attached to the backhoe. As a minimum, the anchorage structures shall be packaged in such a way as to prevent damage during shipment.

8.2 Marking and Handling

Not applicable.

8.3 Special Transportation Requirements

Transportation shall be via truck; rail transportation is not allowed. The subcontractor shall be responsible for dimensional stability and overall integrity of the equipment during shipment.

9. INSTALLATION AND MAINTENANCE

9.1 Installation

The backhoe inner boot with all fittings, outer boot, eight of 14 swing stop shims, and two front adjustment assemblies will be installed into the 446B backhoe. All other items shall be shipped in the unassembled state.

9.2 Startup and Calibration

Not applicable.

9.3 Training

Not applicable.

9.4 Maintenance

Not applicable.

10. MARKING AND IDENTIFICATION

See applicable contract drawings.

11. ACCEPTANCE

11.1 Final Acceptance Method

Submittal and corresponding contractor approval of all applicable documents listed in the vendor data schedule, contractor approval at all hold point inspections, and final inspection and approval of all items, will constitute acceptance.

11.2 Inspection and Hold Point

The contractor shall determine inspection and hold points after review of the manufacturing/inspection/test plan.

Unless otherwise specified by the purchase order, the supplier shall notify the contractor at least five working days in advance of the time that the anchorage structures, swing shims, and internal boot components will be available for source inspection by the contractor representative. Work cannot proceed without written authorization from the contractor after hold point inspection.

11.3 INEEL Surveillance and Audits

The authorized contractor representative may perform source inspection or surveillance.

12. ATTACHMENTS

Vendor data schedule- form 431.14

Contractor drawing 519859

Contractor drawing 519902

Contractor drawing 519903

Contractor drawing 519906

Contractor drawing 519931

Contractor drawing 522045

1) Vendor Data
Form: 431.14

ATTACHMENT A

431.14
08/01/2001
Rev. 03

Vendor Data Schedule

Project Title OU 7-10 GLOVEBOX EXCAVATOR METHOD PROJECT - BACKHOE MODIFICAITON - BOOT INTERNAL AND EXTERNAL

Project No. 021052 - 21979

System Engineer/ Project Manager LOPEZ DARYL A

Date: 12-APR-02

Rev: 0

Vendor Data Coordinator Address STURM BETH L, WCB-3WH502, MS: 3535

Vendor Data Codes				
A. As-Built Drawings B. Assembly Drawings C. Attendance Record D. Blasting Plan E. Catalog Data F. Chem & Physical Analysis G. Concrete Mix Design H. Control System Diagram I. Design Calculations J. Installation Instructions	K. Manufacturers Data Report L. O&M Manual M. Parts List N. Piping Drawing O. Procedure/Instructions P. Pump Head Curves Q. Personnel Qualifications R. Red_line Drawings S. RSMI & Maintenance Log T. Sample(Color, Texture, etc.)	U. Shop Drawings V. Survey Records W. Test Procedure X. Special Processes Y. Operational/CC Testing Z. Test Reports AA. UL/FM Listing AB. Warranty/Guarantee AC. Weld Records AD. Wiring Diagrams	AE. MSDS AF. Hardware Schedule AG. Specification AH. Manufacturing/Inspection/Test Plan AI. Test Certification AJ. Recommended Spares AK. Special Tools List AL. Certificate of Conformance AM. Certificate of Disposal or Destruction AN. Design Verification	AO. Design Qualification Testing AP. Traceability Procedure AQ. Cleaning Procedure AR. Weld Procedure Qualification AS. Welder Performance Personnel Qualifications AT. Non-Destructive Examination Personnel Certifications AU. Inspector Certifications AV. Limited Shelf Life/Operational Data AW. Special Packaging, Shipping, and Rigging Procedure AX. Certificate of Materials to ASME Code AY. Chemical Inventory AZ. Other
When to Submit				
AC - As Completed AT - After Test BC - Before Contract Awarded	BFA - Before Final Acceptance BFR - Before Fabrication Release ROS - Removed Off-Site PDS - Prior to Delivery on site	PTP - Prior to Purchase PS - Prior to Shipment PT - Prior to Test	PTC - Prior to Construction Start PTI - Prior to Installation PTW - Prior to Welding	TS - Time of Shipment WP - With Proposal

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ATTACHMENT A

Item No.	Clause/Article or Drawing/Specification Reference	Description	Vendor Data Code	Extra Copies Required	When to Submit	Approval Code
	6.2		AK. Special Tools List	4	PS - Prior to Shipment	Information Only
	6.4		A. As-Built Drawings	4	BFR - Before Fabrication Release	Approval Required
	6.6		AR. Weld Procedure Qualification	4	BFR - Before Fabrication Release	Approval Required
	6.6	Weld Map	AZ. Other	4	BFR - Before Fabrication Release	Approval Required
	6.6		AS. Welder Performance Personnel Qualifications	4	BFR - Before Fabrication Release	Approval Required
	6.6		AT. Non-Destructive Examination Personnel Certifications	4	BFR - Before Fabrication Release	Approval Required
	6.6	CMTR	AZ. Other	4	BFR - Before Fabrication Release	Approval Required
	5.4		AH. Manufacturing/Inspection/Test Plan	4	BFR - Before Fabrication Release	Approval Required
	6.6	Weld Repair Procedures	AZ. Other	4	BFR - Before Fabrication Release	Approval Required
	5.6		AQ. Cleaning Procedure	4	BFR - Before Fabrication Release	Approval Required
	6.2		AJ. Recommended Spares	4	PS - Prior to Shipment	Information Only
	7.6		AL. Certificate of Conformance	4	TS - Time of Shipment	Information Only
	6.6	NDE Procedures	AZ. Other	4	BFR - Before Fabrication Release	1. Approval Required
	5.3	Chemical and Physical Test	AZ. Other	4	PS - Prior to	2. Information

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ATTACHMENT A

		Report			Shipment	Only

Instructions:
1. Refer to subcontract documents for instructions on submittals.
2. Electronic submittals in lieu of paper documents are acceptable and encouraged.
3. The normal number of copies required is ONE. If more are required, the number will be shown here.
4. THE INEEL WILL SCAN ALL SUBMITTED VENDOR DATA INTO A SYSTEM THAT IS ACCESSIBLE TO ALL INEEL EMPLOYEES UNLESS THE SUPPLIER/SUBCONTRACTOR IDENTIFIES SUBMITTED INFORMATION AS PROPRIETARY.

2) DWG: 519859

FMT-01-REV 3.3

NOTES:

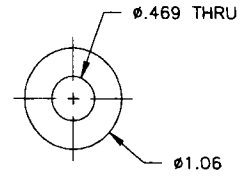
1. WELD AND INSPECT ALL WELDS PER AWS D9.1 USING ITEM 39 OR 40. VISUAL ACCEPTANCE CRITERIA SHALL BE PER AWS D9.1, SECTION 6. EXCEPTION IS NO VISIBLE PORES.

2. FIELD VERIFY DIMENSION PRIOR TO FABRICATION.

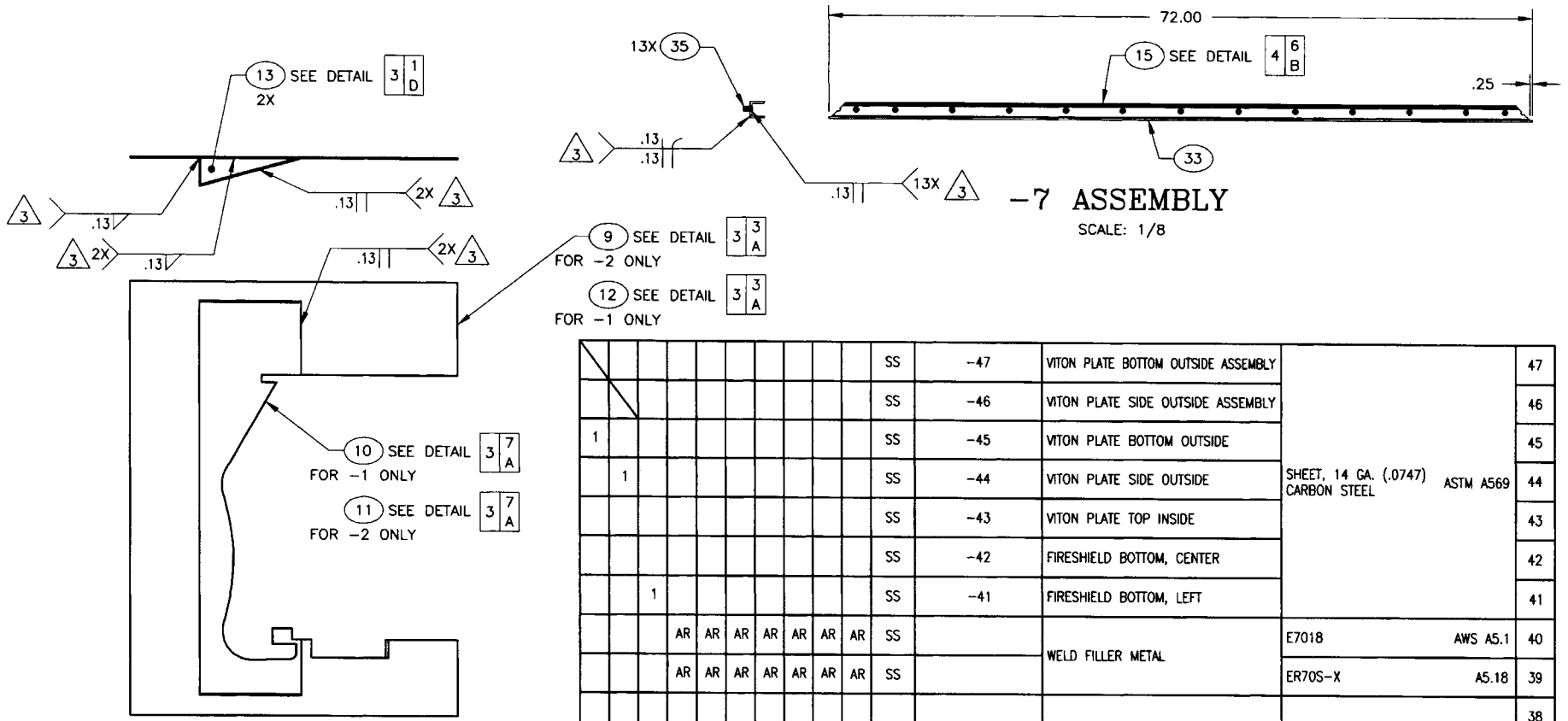
3. PT INSPECT WELD PER ASME BOILER AND PRESSURE VESSEL CODE, SECTION V, ARTICLE 6. ACCEPTANCE CRITERIA:

   A- ONLY INDICATIONS WITH MAJOR DIMENSIONS GREATER THAN 1/16" SHALL BE CONSIDERED RELEVANT
   B- THE FOLLOWING RELEVANT INDICATIONS ARE UNACCEPTABLE:
      1- ANY CRACKS OR LINEAR INDICATIONS
      2- ROUNDED INDICATIONS WITH DIMENSIONS GREATER THAN 3/16".
      3- FOUR OR MORE ROUNDED INDICATIONS IN A LINE SEPARATED BY 1/16" OR LESS EDGE-TO-EDGE.
      4- TEN OR MORE ROUNDED INDICATIONS IN ANY SIX SQUARE INCHES OF AREA WHOSE MAJOR DIMENSION IS NO MORE THAN SIX INCHES WITH THE DIMENSIONS BEING TAKEN IN THE MOST UNFAVORABLE LOCATION RELATIVE TO THE INDICATIONS BEING EVALUATED.

4. REMOVE ALL BURRS, WELD SLAG & SHARP EDGES.



(30) DETAIL
SCALE: 1/1



-7 ASSEMBLY
SCALE: 1/8

-1 ASSEMBLY SHOWN
SCALE: 1/8

-2 ASSEMBLY OPPOSITE
SCALE: 1/8

-47	-46	-8	-7	-6	-5	-4	-3	-2	-1	SAFETY CAT.	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	MATERIAL/SPECIFICATION OR VENDOR NAME	ITEM NO.
										SS	-47	VITON PLATE BOTTOM OUTSIDE ASSEMBLY	SHEET, 14 GA. (.0747) CARBON STEEL ASTM A569	47
										SS	-46	VITON PLATE SIDE OUTSIDE ASSEMBLY		46
1										SS	-45	VITON PLATE BOTTOM OUTSIDE		45
	1									SS	-44	VITON PLATE SIDE OUTSIDE		44
										SS	-43	VITON PLATE TOP INSIDE		43
										SS	-42	FIRESHIELD BOTTOM, CENTER		42
		1								SS	-41	FIRESHIELD BOTTOM, LEFT		41
			AR	AR	AR	AR	AR	AR	AR	SS		WELD FILLER METAL	E7018 AWS A5.1	40
			AR	AR	AR	AR	AR	AR	AR	SS			ER70S-X A5.18	39
														38
										SS		CAP	PLATE, 3/16 THK CARBON STEEL ASTM A36	37
										SS		CHANNEL	C6X13.0 CARBON STEEL ASTM A36	36
4	3		13	29						SS		FULLY THREADED STUD 3/8-16 UNC-2A X 3/4 LG	CARBON STEEL ASTM A449	35
										CG		GUSSET	PLATE, 1/8 THK CARBON STEEL ASTM A36	34
			1							SS		SPACER	PLATE, 3/16 THK CARBON STEEL ASTM A36	33
				1						SS			PLATE, 9/16 THK CARBON STEEL ASTM A36	32
				2						SS			PLATE, 1/4 THK CARBON STEEL ASTM A36	31

PARTS LIST

7	6	5	4	3	2	1	SHEET
-	-	-	-	-	-	-	REV

REV STATUS OF SHEETS

REVISIONS		
REV	DESCRIPTION	EFFECTIVE DATE:

OFFSPRING DRAWINGS

519903
519933
519931

-47	-46	-8	-7	-6	-5	-4	-3	-2	-1	SAFETY CAT.	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	MATERIAL/SPECIFICATION OR VENDOR NAME	ITEM NO.
										SS	-30	RECEPTACLE GASKET	HIGH GRADE VITON 1/16" THK., DUR 75A ASTM D-2000-86E TYPE HK	30
										SS	-29	GASKET	HIGH GRADE VITON 1/8" THK., DUR 70A ASTM D-2000-86E TYPE HK	29
		1								SS	-28	FIRESHIELD SIDE LEFT	SHEET, 14 GA. (.0747) CARBON STEEL ASTM A569	28
							1			SS	-27	FIRESHIELD SIDE RIGHT		27
							1			SS	-26	FIRESHIELD BOTTOM RIGHT		26
										SS	-25	FIRESHIELD TOP		25
										SS	-24	VITON PLATE SIDE INSIDE		24
										SS	-23	VITON PLATE TOP OUTSIDE		23
										SS	-22	VITON PLATE BOTTOM INSIDE		22
				2						CG	-21	SIDE CHANNEL	MAKE FROM UNISTRUT CORP P/N P3300	21
				1						CG	-20	TOP/BOTTOM CHANNEL		20
					1					SS	-19	INNER SUPPORT BOTTOM	MAKE FROM L1 1/2 X 1 1/2 X 3/16 CS ASTM A36	19
					2					SS	-18	INNER SUPPORT SIDE		18
					1					SS	-17	INNER SUPPORT TOP		17
				2						SS	-16	CHANNEL SIDE	L1 1/2 X 1 1/2 X 3/16 CARBON STEEL ASTM A36	16
			1							SS	-15	CHANNEL BOTTOM		15
				1						SS	-14	CHANNEL TOP		14
								2	2	SS	-13	SEAL HAT FILLER	SHEET, 10 GA. (.1345) CARBON STEEL ASTM A569	13
									1	SS	-12	SEAL PLATE, RIGHT		12
								1		SS	-11	SEAL HAT		11
									1	SS	-10			10
								1		SS	-9	SEAL PLATE, LEFT		9
										SS	-8	FIRESHIELD ASSEMBLY, LEFT		8
										SS	-7	BOTTOM CHANNEL ASSEMBLY		7
										SS	-6	TOP CHANNEL ASSEMBLY		6
										SS	-5	UNISTRUT ASSEMBLY		5
										SS	-4	INNER SUPPORT ASSEMBLY		4
										SS	-3	FIRESHIELD ASSEMBLY, RIGHT		3
										SS	-2	RIGHT SEAL ASSEMBLY		2
										SS	-1	LEFT SEAL ASSEMBLY		1

PARTS LIST

DASH NO.	NEXT ASSY
-8	519903
-47	519903
-46	519903
-43	519903
-42	519903
-37	519933
-36	519933

APPLICATION

DASH NO.	NEXT ASSY
-34	519903
-30	519903
-29	519903
-25	519903
-24	519903
-23	519903
-22	519903

APPLICATION

DASH NO.	NEXT ASSY
-7	519903
-6	519903
-5	519903
-4	519903
-3	519903
-2	519903
-1	519903

APPLICATION

PROFESSIONAL ENGINEER REGISTERED STATE OF IDAHO BLAIR K. GROVER 9405 7-11-2002

DIMENSIONING AND SYMBOLOGY ARE AMERICAN NATIONAL STANDARD UNLESS OTHERWISE SPECIFIED
SURFACE ROUGHNESS 125
DIMENSIONS AND TOLERANCES ARE IN INCHES
TOLERANCES: .X = ± .1
DECIMALS: .XX = ± .03
.XXX = ± .010
FRACTIONS ± 1/8
ANGULAR ± 1°
DO NOT SCALE DRAWING

SUBCONTRACT NO.

REQUESTER: SA DAVIES
DESIGN: B GROVER
DRAWN: BUBBA
PROJECT NO. 021052
SPEC CODE
FOR REVIEW/APPROVAL SIGNATURES
SEE DAR NO. 93345
EFFECTIVE DATE: 7/11/2002

INEEL BECHTEL BWXT IDAHO, LLC

OU 7-10
GLOVEBOX EXCAVATOR METHOD PROJECT
EXCAVATOR MODIFICATIONS
OUTER SEAL DETAILS & ASSEMBLIES

SIZE	CAGE CODE	INDEX CODE NUMBER AREA	TYPE	Q.	ORG	DWG-	REV
D	01MF3	098	0671	41	090	519859	

SCALE: NOTED
SHEET 1 OF 7

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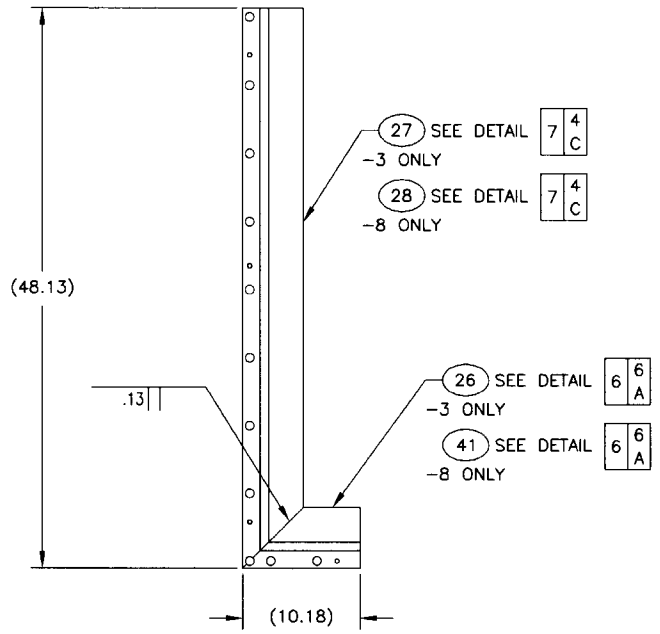
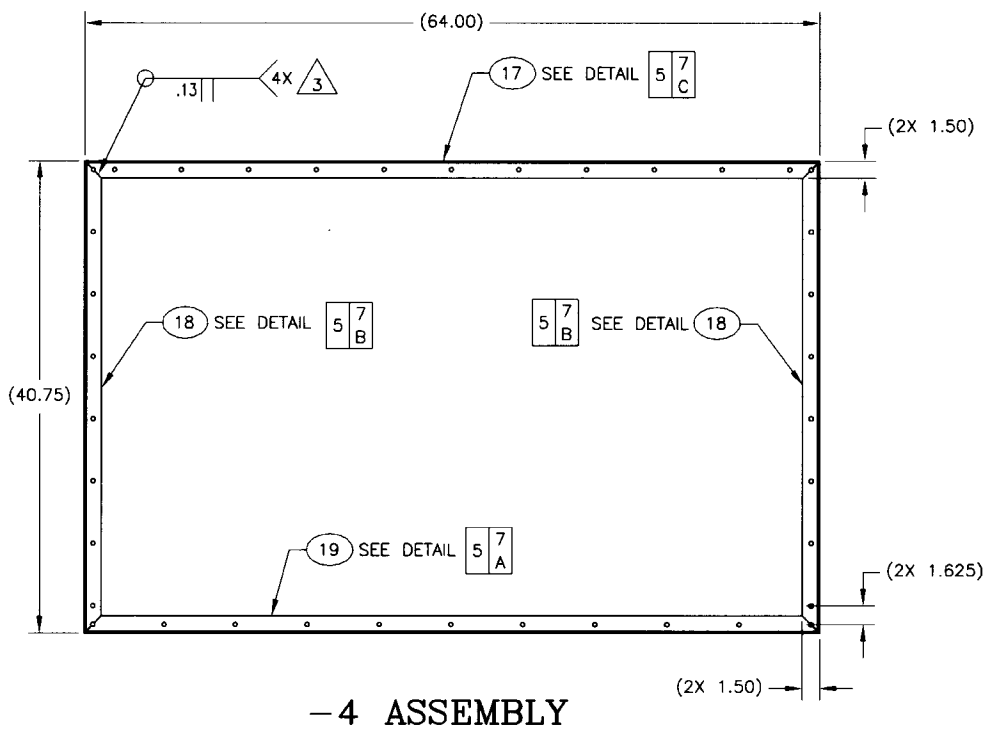


-3 ASSEMBLY SHOWN
SCALE: 1/8

-8 ASSEMBLY OPPOSITE
SCALE: 1/8



-4 ASSEMBLY
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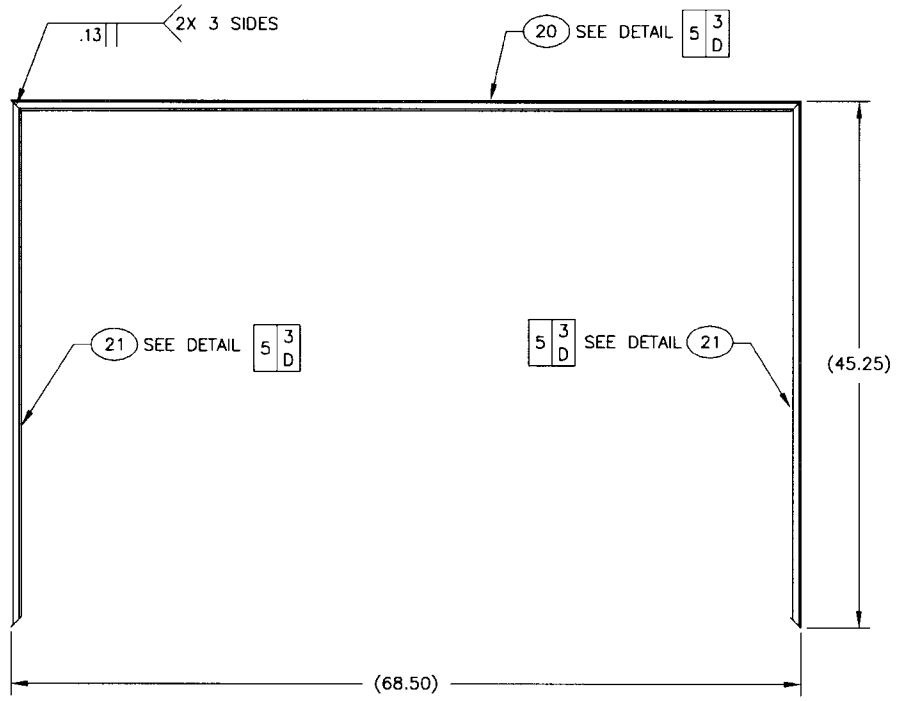

-5 ASSEMBLY
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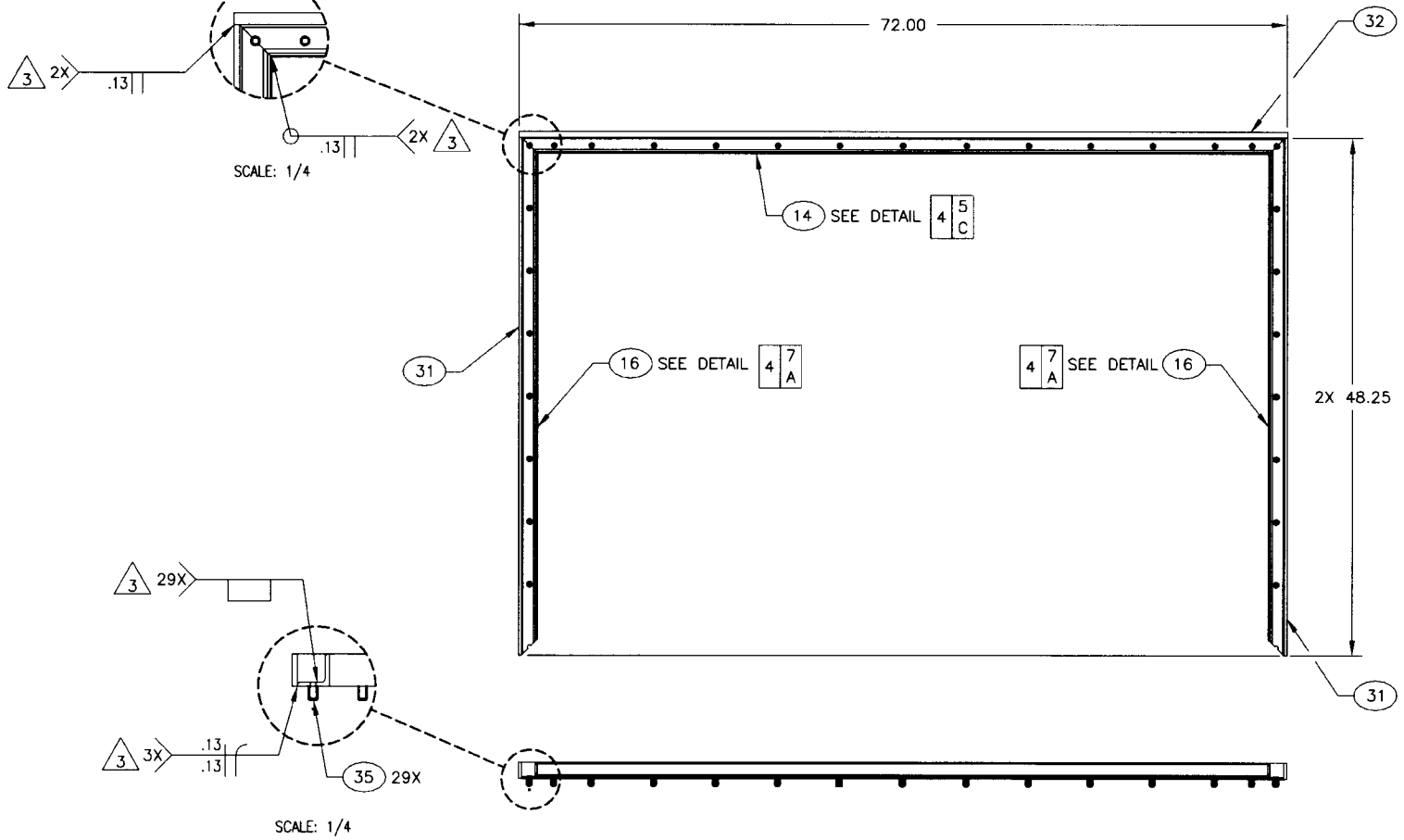
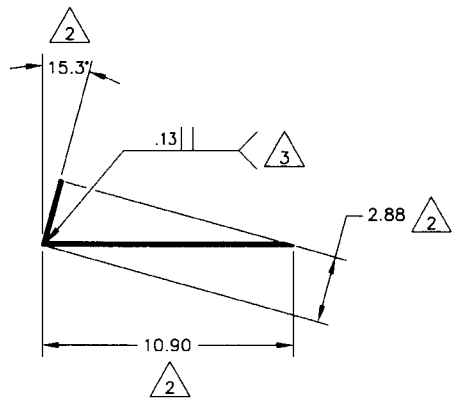


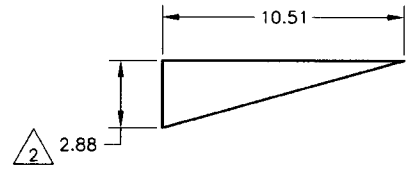
SCALE: 1/4

SCALE: 1/4

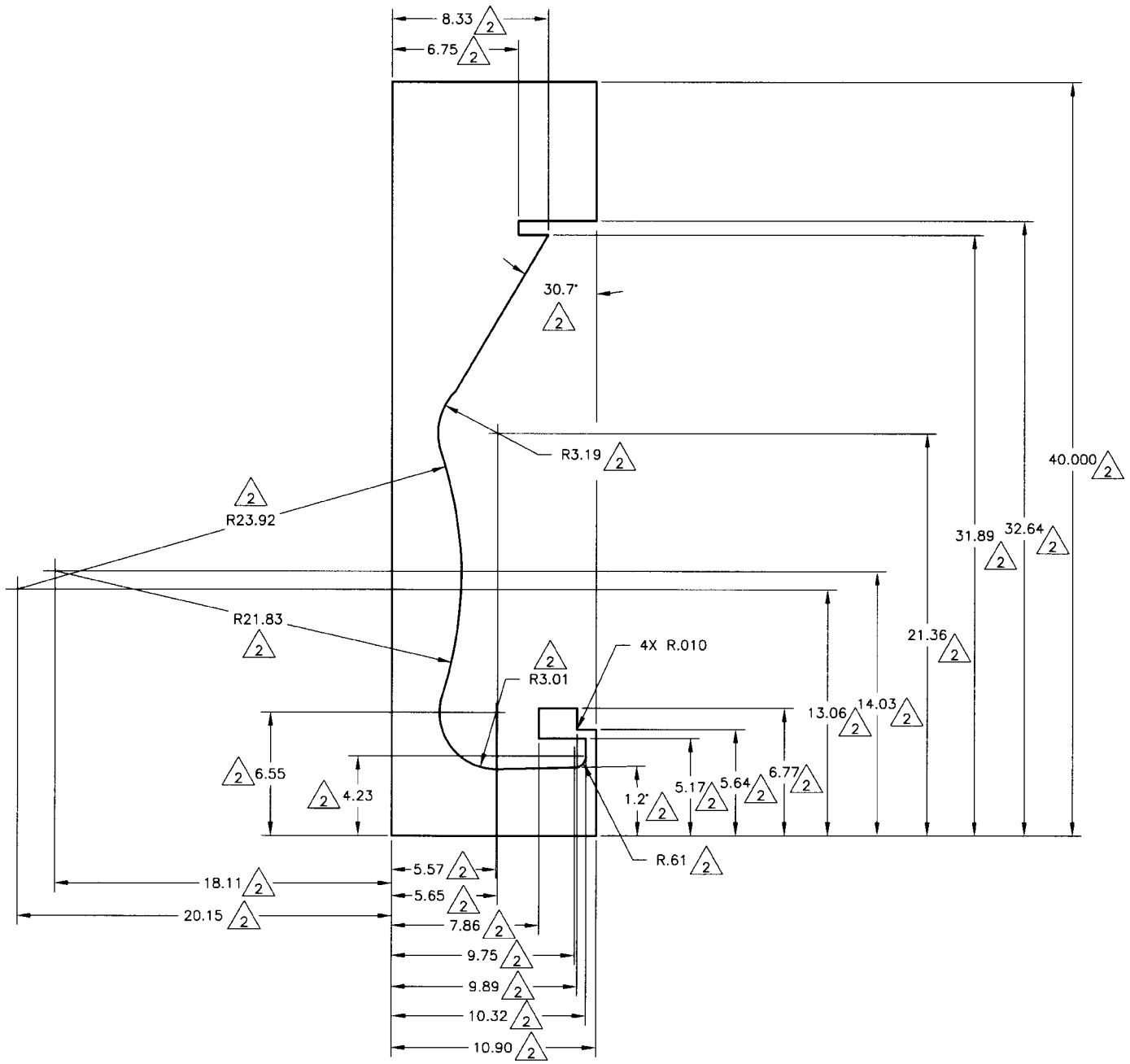
-6 ASSEMBLY
SCALE: 1/8

SIZE	CAGE CODE	INDEX CODE NUMBER				DWG-519859	REV
		AREA	TYPE	CL	ORIG		
D	01MF3	098	0671	41	090		
SCALE: NOTED						SHEET 2	



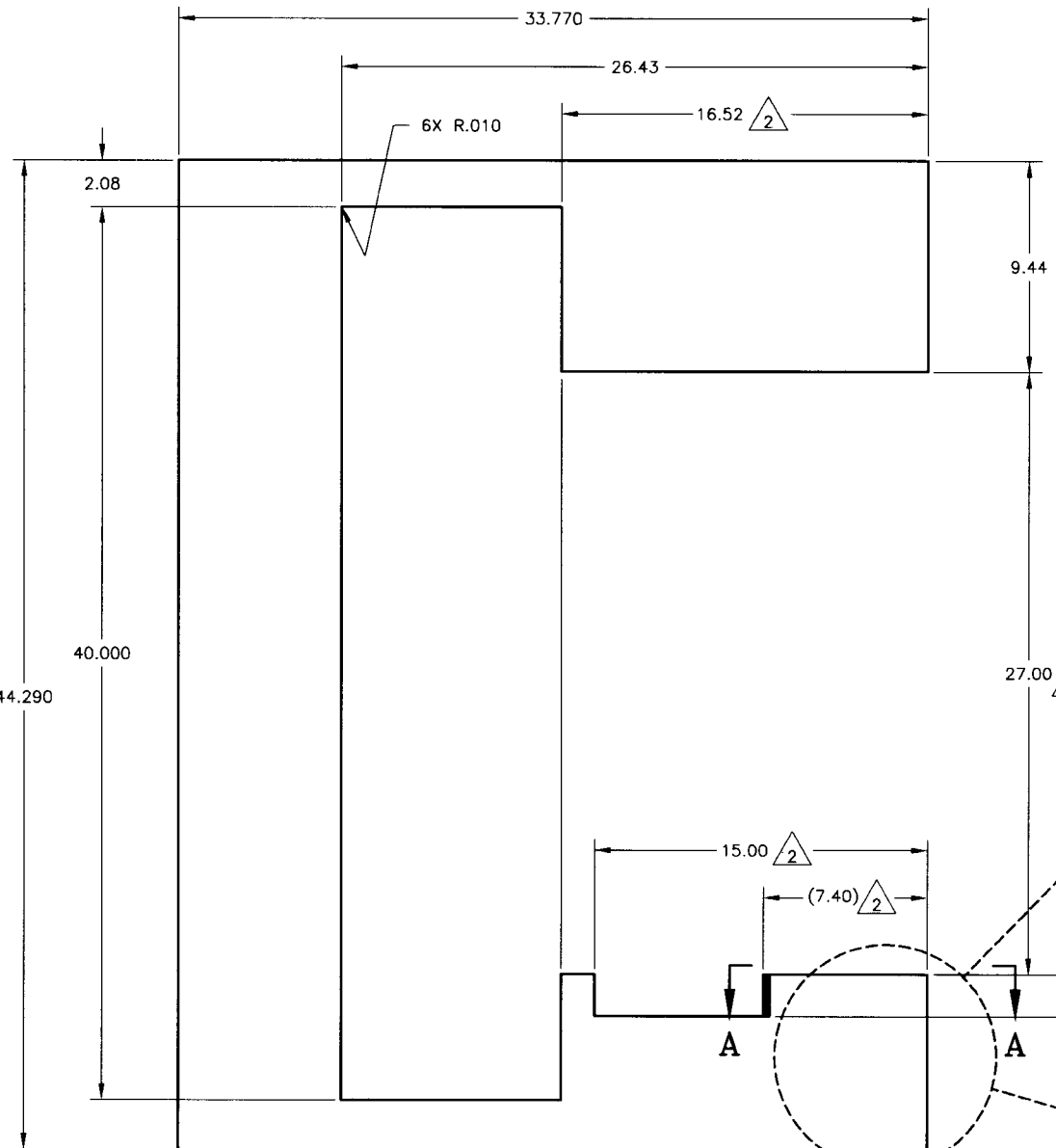


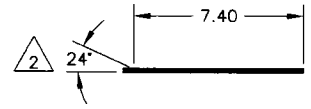
(13) DETAIL
SCALE: 1/4



(10) DETAIL SHOWN
SCALE: 1/4

(11) DETAIL OPPOSITE
SCALE: 1/4





VIEW A–A
SCALE: 1/4

(9) DETAIL
SCALE: 1/4

(12) DETAIL
SCALE: 1/4

SIZE	CAGE CODE	INDEX CODE NUMBER				DWG-519859	REV
		AREA	TYPE	CL	ORIG		
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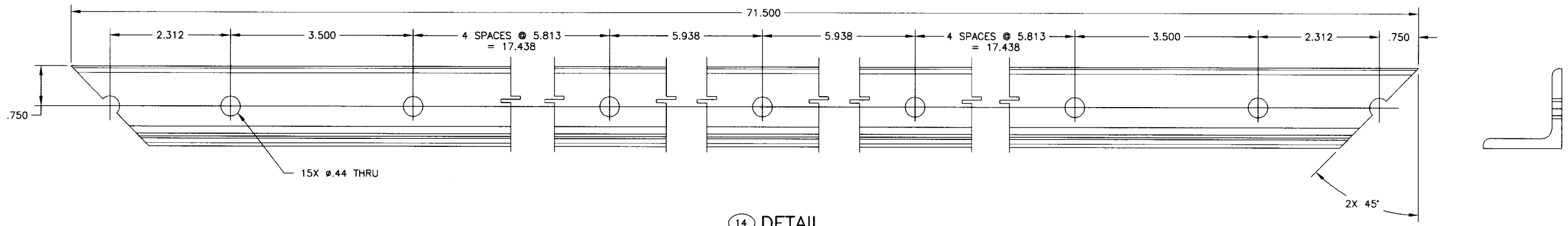
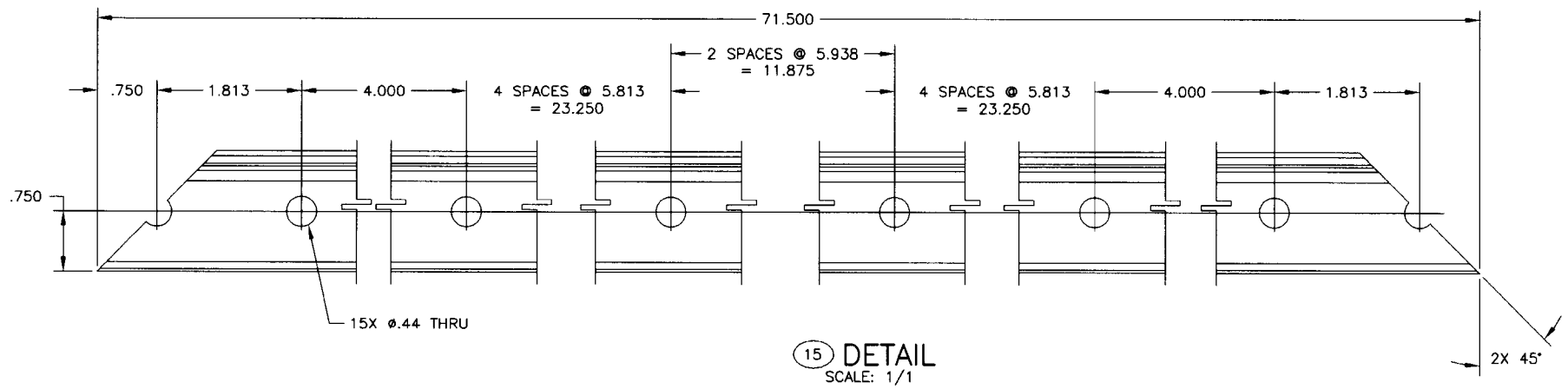
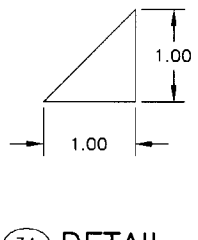
SCALE: NOTED						SHEET 3	



(14) DETAIL
SCALE: 1/1



(15) DETAIL
SCALE: 1/1



(34) DETAIL
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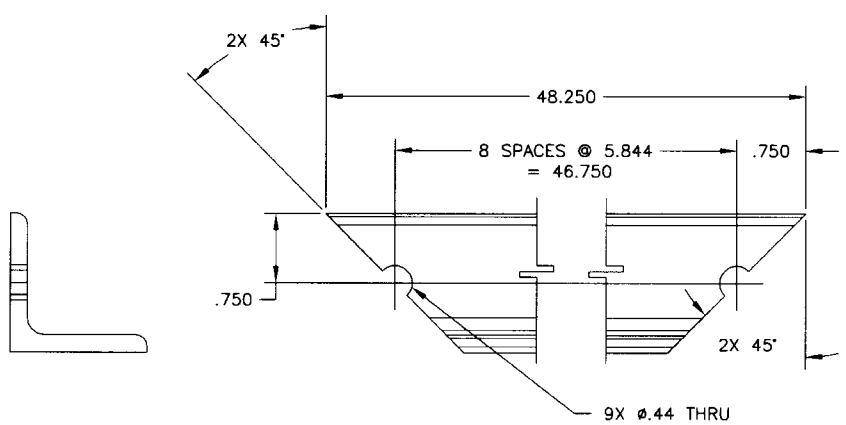

(16) DETAIL
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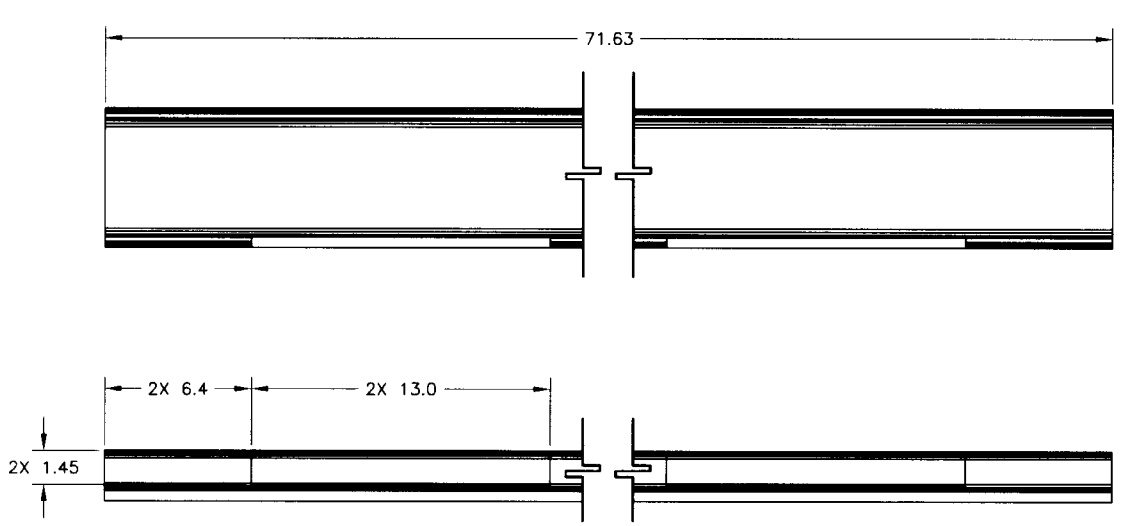
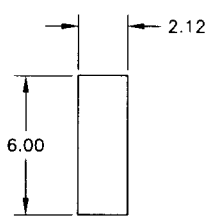


(36) DETAIL
SCALE: 1/8



(37) DETAIL
SCALE: 1/4

SIZE	CAGE CODE	INDEX CODE NUMBER				DWG-519859	REV
		AREA	TYPE	CL	ORIG		
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SCALE NOTED						SHEET 4	

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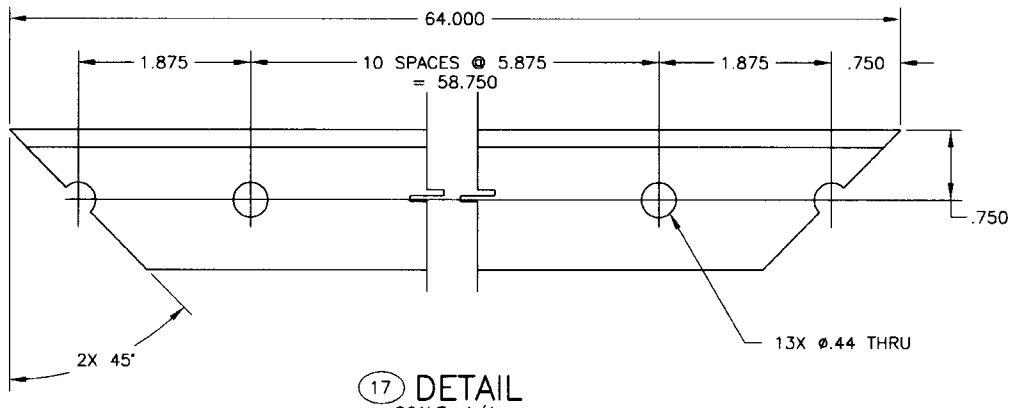
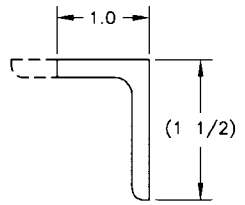
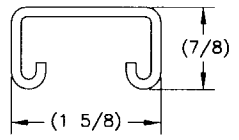
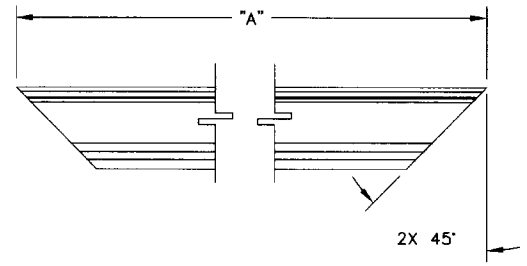


17 DETAIL
SCALE: 1/1







20 DETAIL
SCALE: 1/1

21 DETAIL
SCALE: 1/1

DASH NO.	"A"
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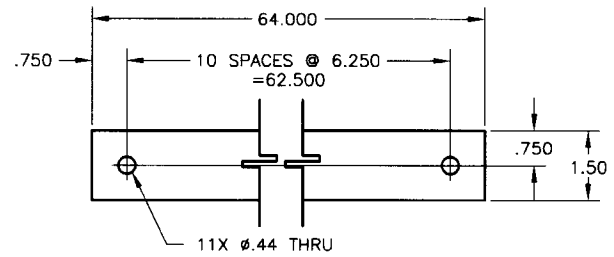
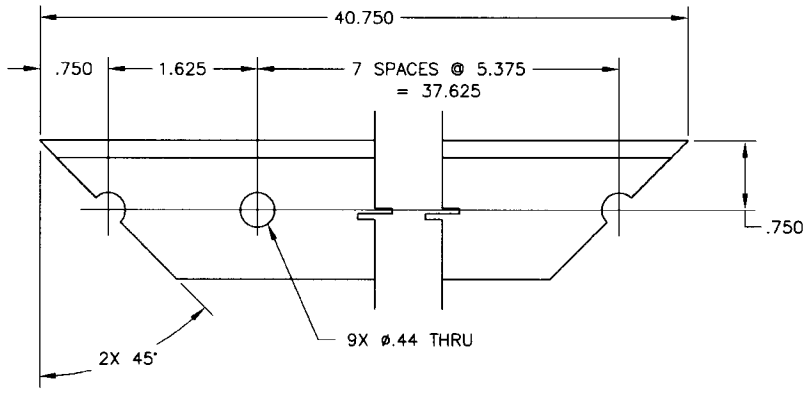
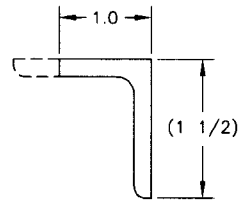
-21	45.250

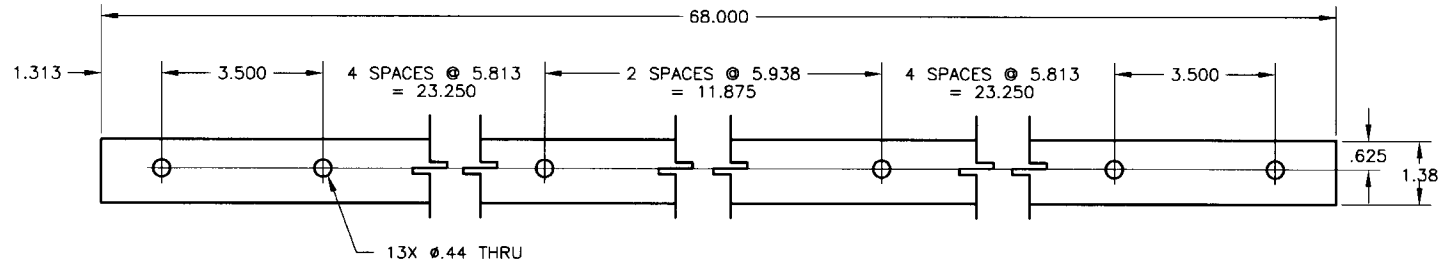


22 DETAIL
SCALE: 1/2



18 DETAIL
SCALE: 1/1





23 DETAIL
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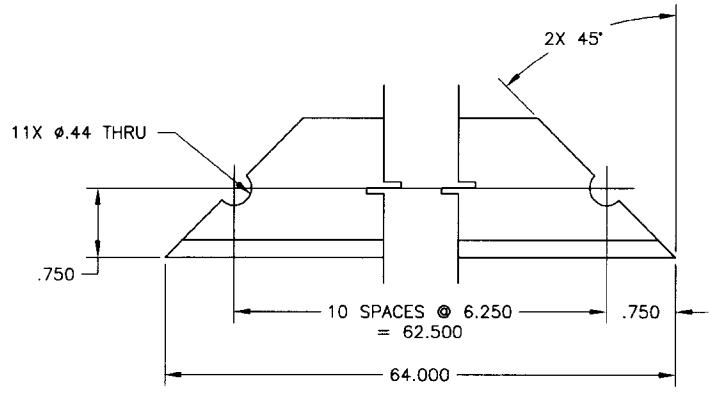
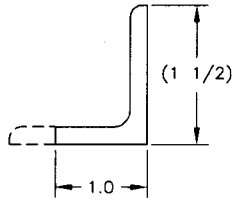
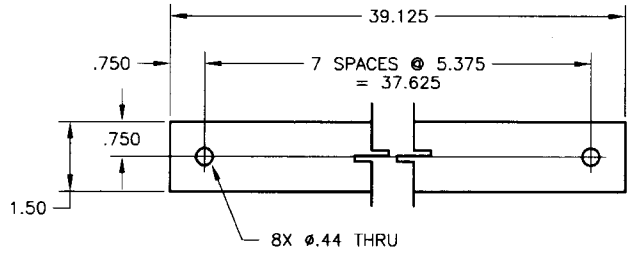


19 DETAIL
SCALE: 1/1





24 DETAIL
SCALE: 1/2

SIZE	CAGE CODE	INDEX CODE NUMBER					DWG-519859	REV
		AREA	TYPE	CL	ORIG			
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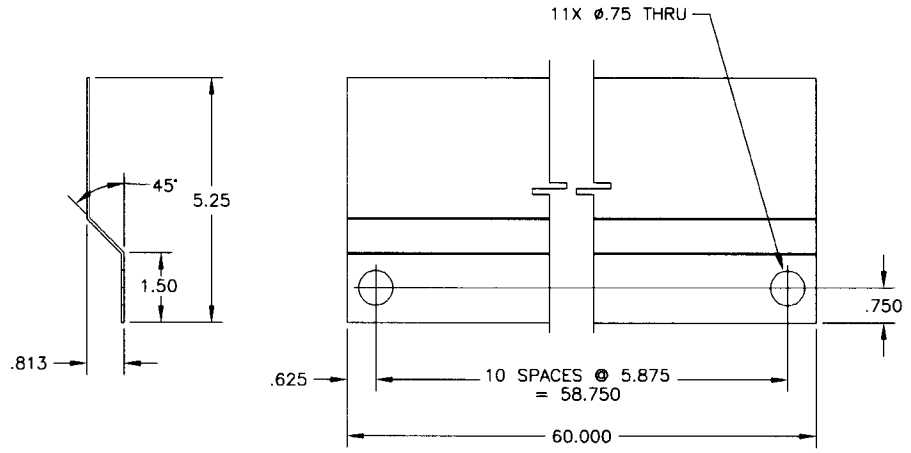
Date: 06/07/02 - 11:09 A.M.
ID: BUB4



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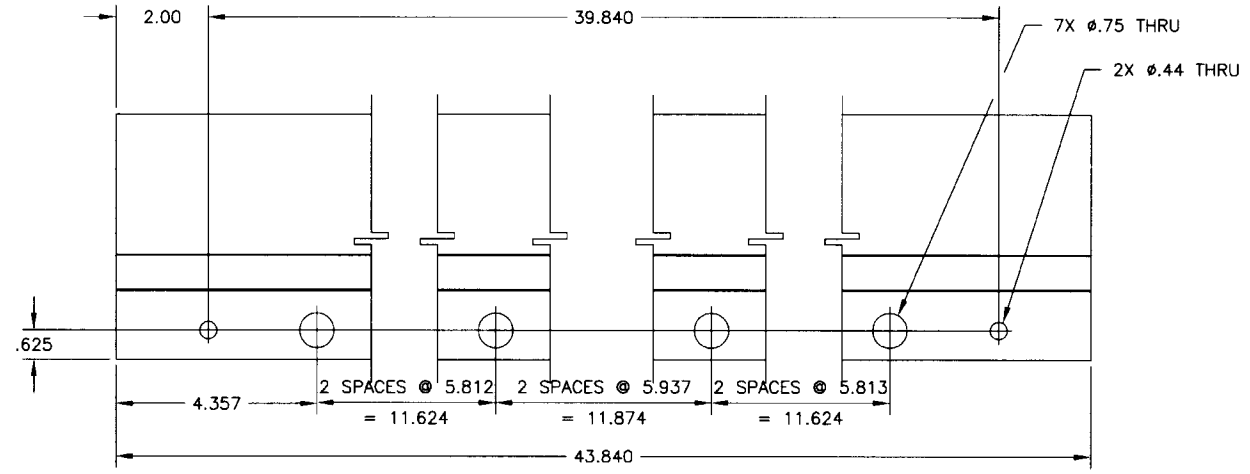
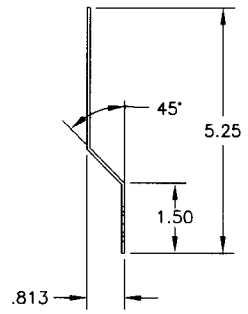
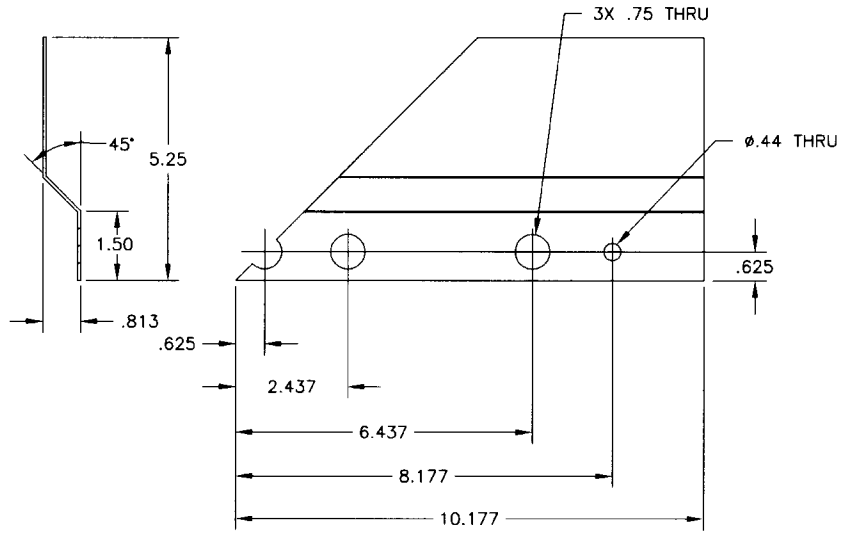


(42) DETAIL
SCALE: 1/2





(26) DETAIL SHOWN
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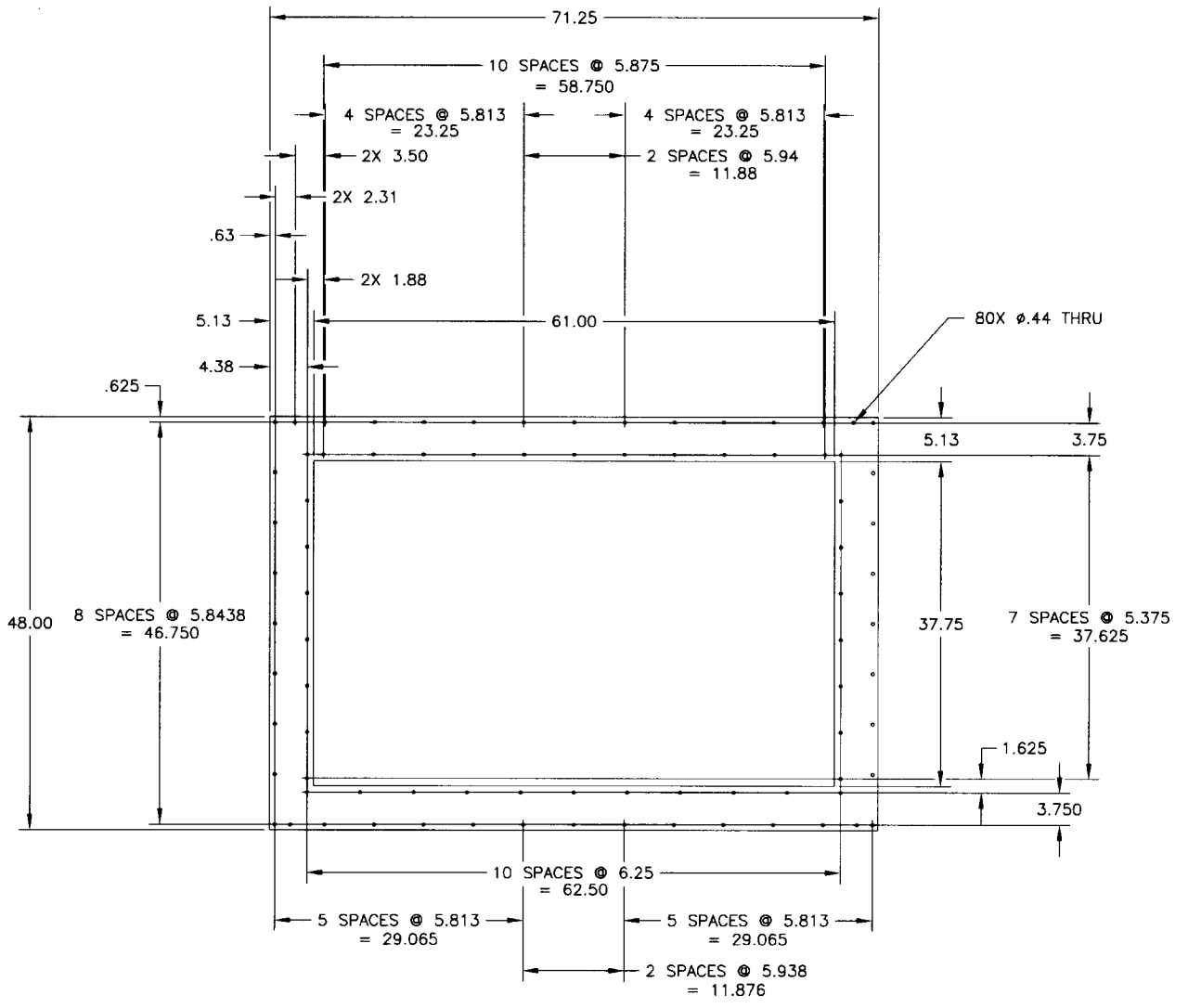
(41) DETAIL OPPOSITE
SCALE: 1/2



(29) DETAIL
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		ARS A	TYPE	CL	ORIG		
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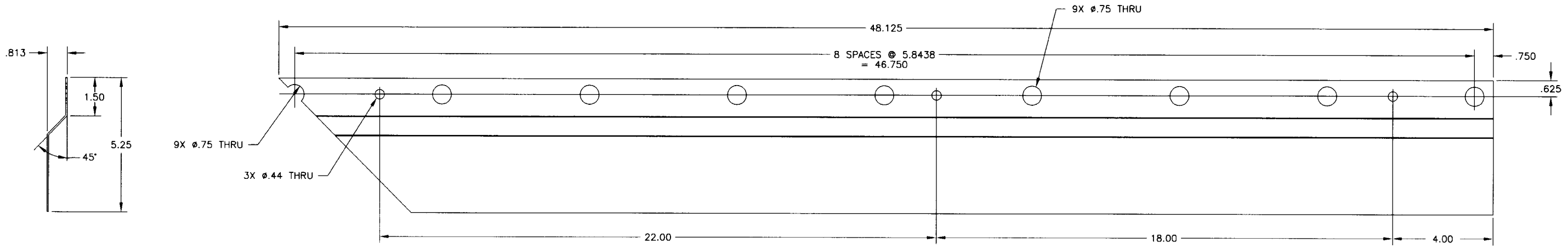

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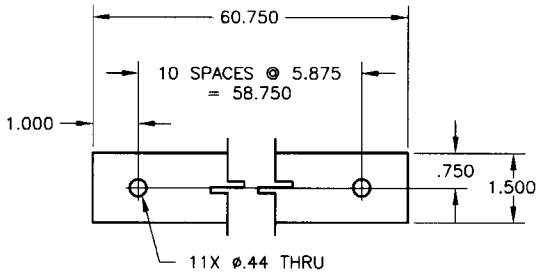
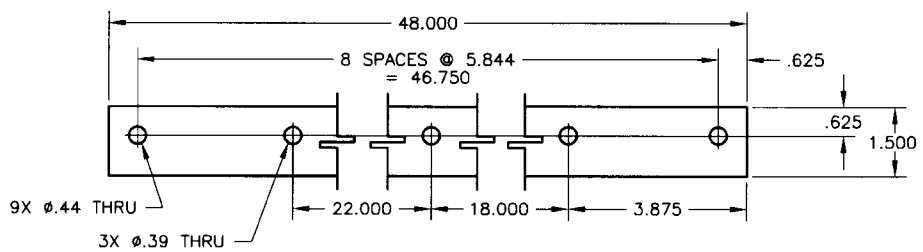
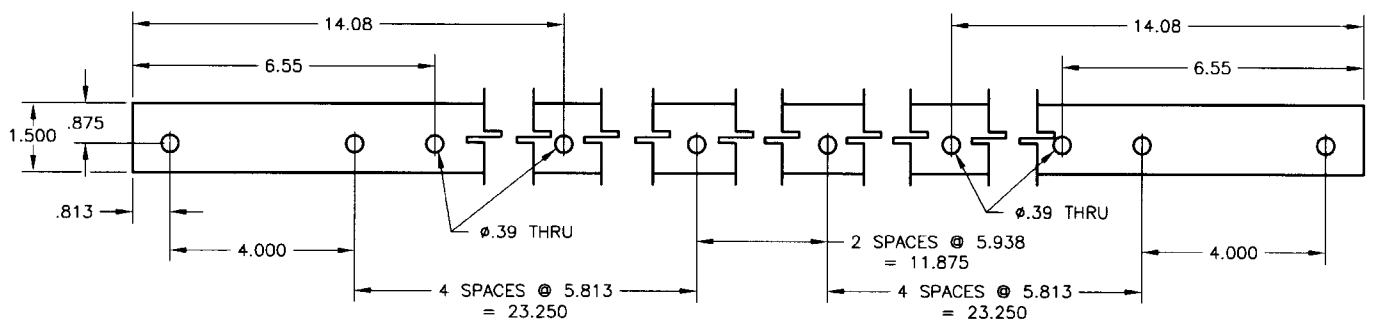
(28) DETAIL OPPOSITE
SCALE: 1/2



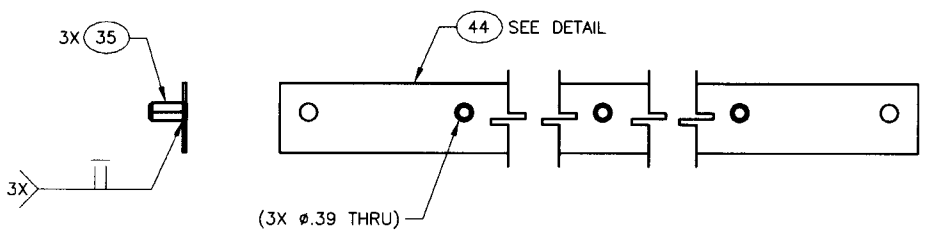
(43) DETAIL
SCALE: 1/2



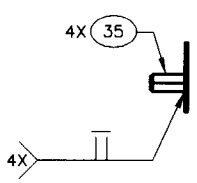
(44) DETAIL
SCALE: 1/2

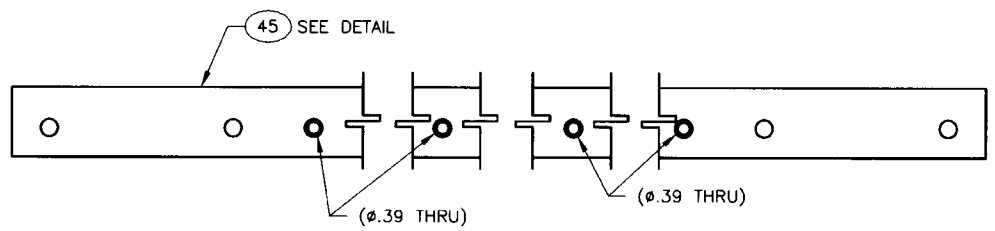


(45) DETAIL
SCALE: 1/2



−46 ASSEMBLY
SCALE: 1/2





−47 ASSEMBLY
SCALE: 1/2

SIZE	CAGE CODE	INDEX CODE NUMBER				DWG-	REV
		AREA	TYPE	CL	ORIG		
D	01MF3	098	0671	41	090	519859	

SCALE: NOTED SHEET 7

3) DWG: 519902

NOTES:

1. FIELD VERIFY DIMENSION PRIOR TO FABRICATION AND MAKE ADJUSTMENTS IF NEEDED.
2. WELD PER AWS D9.1 USING EITHER ITEM 23 OR 24. VISUAL INSPECTION AND ACCEPTANCE CRITERIA SHALL BE PER AWS D9.1 SECTION 6, EXCEPTION IS NO VISIBLE PORES.
3. PT INSPECT ALL WELDS PER ASME BOILER AND PRESSURE VESSEL CODE SECTION V ARTICLE 6. ACCEPTANCE CRITERIA:

   ONLY INDICATION WITH MAJOR DIMENSIONS GREATER THAN 1/16 INCH SHALL BE CONSIDERED RELEVANT.

   THE FOLLOWING RELEVANT INDICATIONS ARE UNACCEPTABLE:

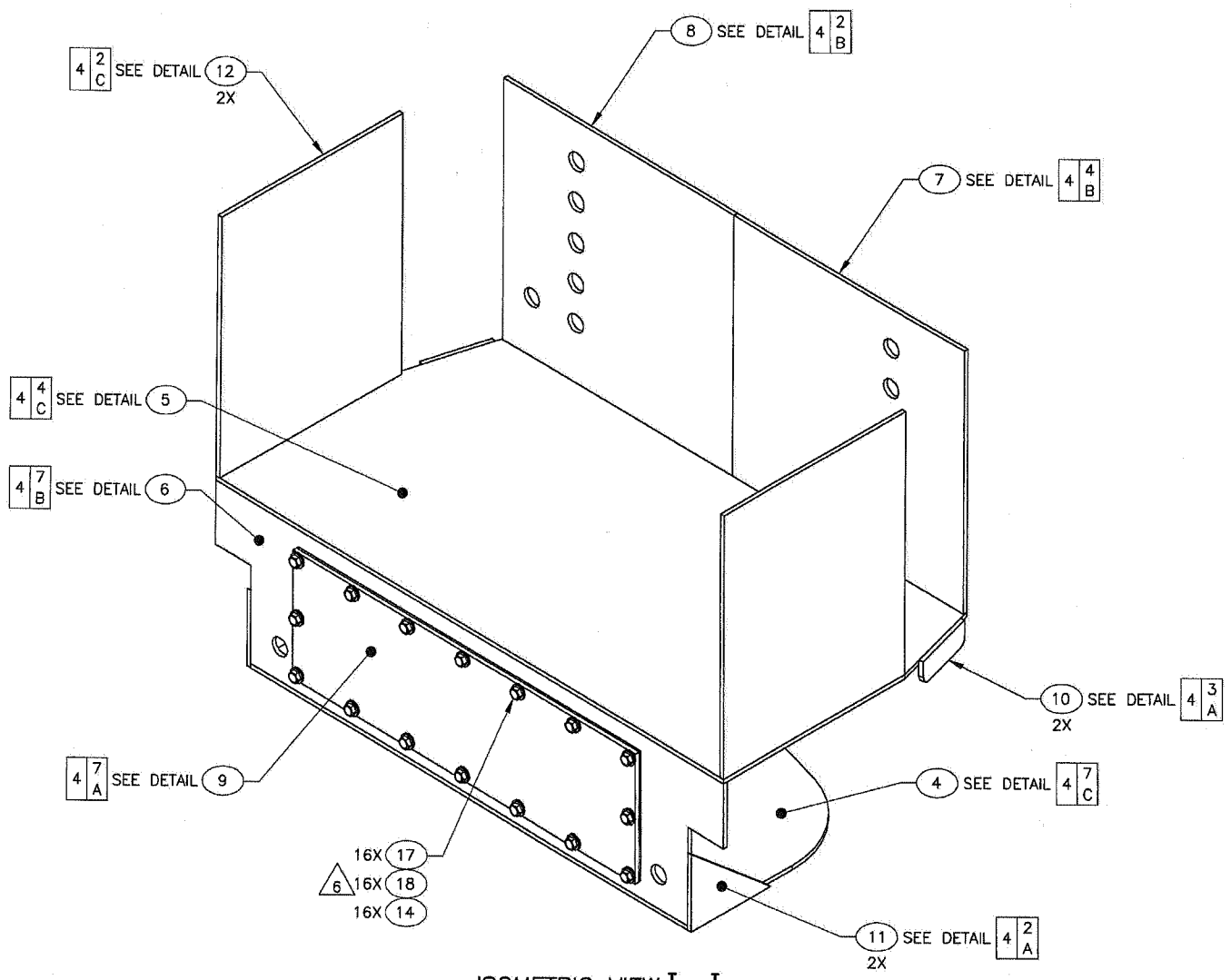
   A. ANY CRACKS OR LINEAR INDICATIONS.

   B. ROUNDED INDICATIONS WITH DIMENSIONS GREATER THAN 3/16 INCH.

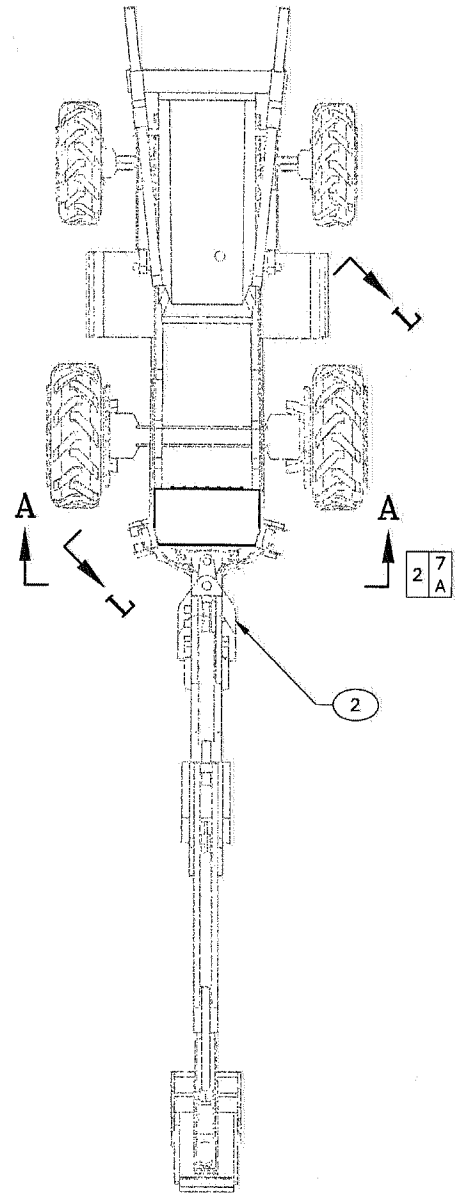
   C. FOUR OR MORE ROUNDED INDICATIONS IN A LINE SEPARATED BY 1/16 INCH OR LESS EDGE-TO-EDGE.

   D. TEN OR MORE ROUNDED INDICATIONS IN ANY SIX SQUARE INCHES OF AREA WHOSE MAJOR DIMENSION IS NO MORE THAN SIX INCHES WITH THE DIMENSIONS BEING TAKEN IN THE MOST UNFAVORABLE LOCATION RELATIVE TO THE INDICATIONS BEING EVALUATED.

4. MARK PER STD-7006-2D WITH 519902-1 USING 1/2 INCH HIGH CHARACTERS AT APPROXIMATE LOCATION SHOWN.
5. PAINT PER SPECIFICATIONS AFTER FABRICATION IS COMPLETE. PRIME WITH ONE COAT OF ITEM 21 AND PAINT WITH 2 COATS OF ITEM 22.
6. TORQUE TO 20 LB/FT DRY.
7. THIS DRAWING TO BE USED IN CONJUNCTION WITH:
   519931 – WSE MODIFICATIONS
8. SUBCONTRACTOR HAS OPTION OF FABRICATION AND INSTALLATION OF ITEMS 7 AND 8 IN ONE SECTION.



ISOMETRIC VIEW L–L
SCALE: NONE
ROTATED 180°
INFORMATION ONLY
ITEMS 4–12, 15 AND 17 SHOWN ONLY



–1 INSTALLATION
(PLAN VIEW)
SCALE: 1/30
CAB REMOVED FOR CLARITY

OFFSPRING DRAWING
519931

XREF DRAWINGS
519858

4	3	2	1	SHEET	REV STATUS OF SHEETS
–	–	–	–	REV	

REVISIONS		
REV	DESCRIPTION	EFFECTIVE DATE:

PARTS LIST

ITEM NO.	MATERIAL/SPECIFICATION OR VENDOR NAME	NOMENCLATURE OR DESCRIPTION	PART OR IDENTIFYING NO.	SAFETY CAT.	QTY REQD
24	E7018 AWS A5.1	WELD FILLER METAL		SS	AR
23	ER70S-X AWS A5.18	WELD FILLER METAL		SS	AR
22	KEELER AND LUNG	PAINT, P-SERIES COPOLYMERIZED SILICONE – ALKYD EMAMEL LIGHT GREY	5540	CG	AR
21	KEELER AND LUNG	PRIMER	6040	CG	AR
20					
19					
18	CS ASTM F436	WASHER, PLAIN 3/8 TYPE A 13/32 ID, 13/16 OD		SS	16
17	CS ASTM A449	BOLT, HEX HD. 3/8-16 UNC-2A X 1 LG		SS	16
16	ASTM D-2000-86E TYPE HK	GASKET 1/16 THK, HIGH GRADE VITON, 24 X 12, DUR SHORE 70A	-16	SS	16
15	ASTM D-2000-86E TYPE HK	GASKET 1/8 THK, HIGH GRADE VITON, 24 X 12, DUR SHORE 70A	-15	SS	1
14					
13					
12	PLATE, 1/4 THK CS ASTM A36	SIDE PLATE	-12	SS	2
11		GUSSET	-11	SS	2
10		OUTRIGGER COVER PLATE	-10	SS	2
9		HATCH COVER	-9	SS	1
8		RIGHT PLATE	-8	SS	1
7		LEFT PLATE	-7	SS	1
6		FRONT PLATE	-6	SS	1
5		MID PLATE	-5	SS	1
4		BOTTOM PLATE	-4	SS	1
3					
2	MAKE FROM CATERPILLAR BACKHOE MODEL 446B	EXCAVATOR	-2	CG	1
1		INNER SEAL INSTALLATION	-1	SS	

DASH NO.	NEXT ASSY
–1	519933
APPLICATION	

DIMENSIONING AND SYMBOLOGY ARE AMERICAN NATIONAL STANDARD UNLESS OTHERWISE SPECIFIED
SURFACE ROUGHNESS 125/
DIMENSIONS AND TOLERANCES ARE IN INCHES
TOLERANCES: .X = ± .1
DECIMALS: .XX = ± .03
.XXX = ± .010
FRACTIONS ± 1/8
ANGULAR ± 2°
DO NOT SCALE DRAWING

SUBCONTRACT NO.
REQUESTER: S.A. DAVIES
DESIGN: B. GROVER
DRAWN: Lisa Keller
PROJECT NO. 021052
SPEC CODE
FOR REVIEW/APPROVAL SIGNATURES SEE DAR NO. 93345
EFFECTIVE DATE: 7/11/2002

INEEL Idaho National Engineering & Environmental Laboratory BECHTEL BWXT IDAHO, LLC

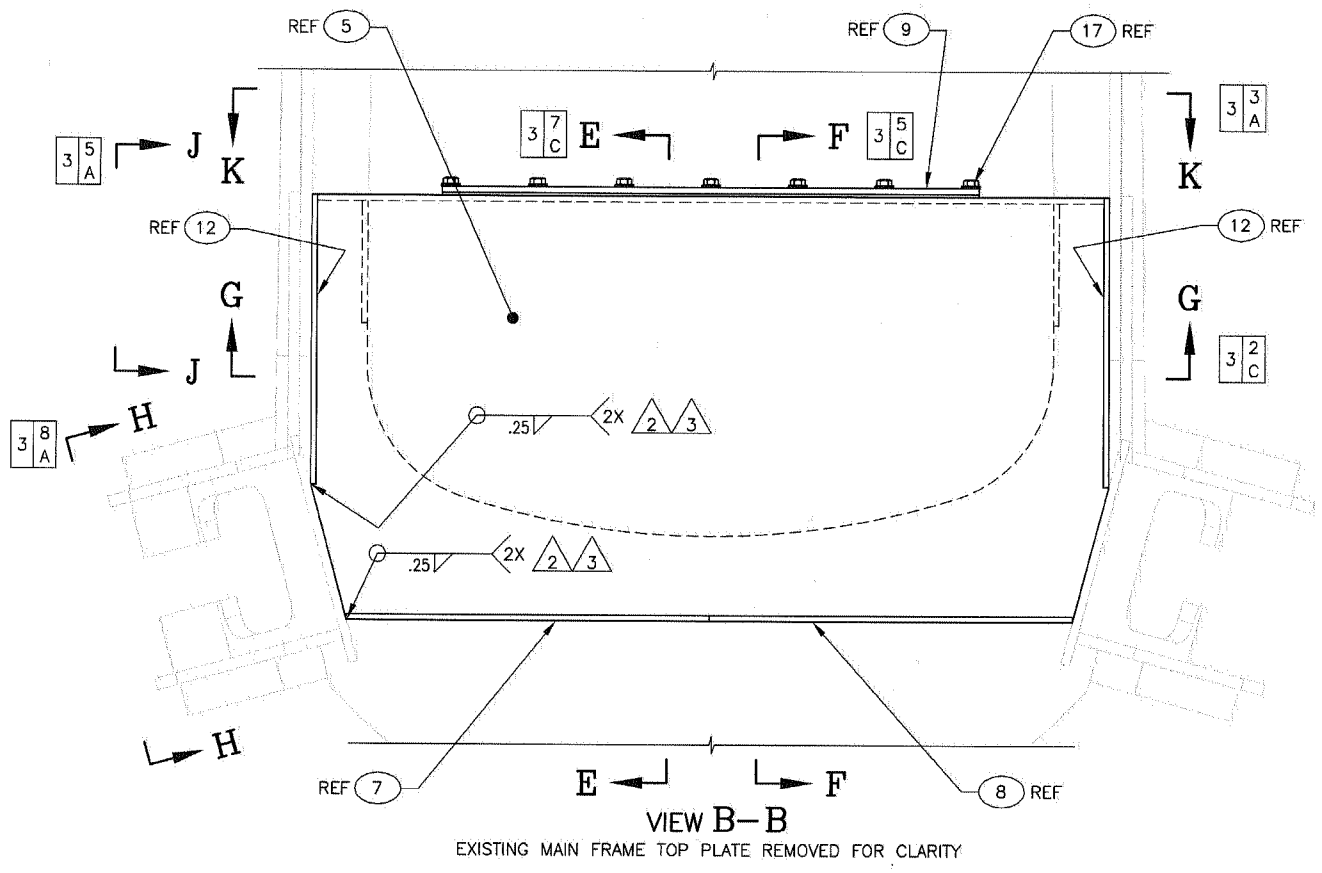
OU 7-10
GLOVEBOX EXCAVATOR METHOD PROJECT
EXCAVATOR MODIFICATIONS
INNER SEAL INSTALLATION

SIZE	CAGE CODE	INDEX CODE NUMBER AREA	TYPE	SI	ORIG	DWG-	REV
D	01MF3	098	0671	41	090	519902	

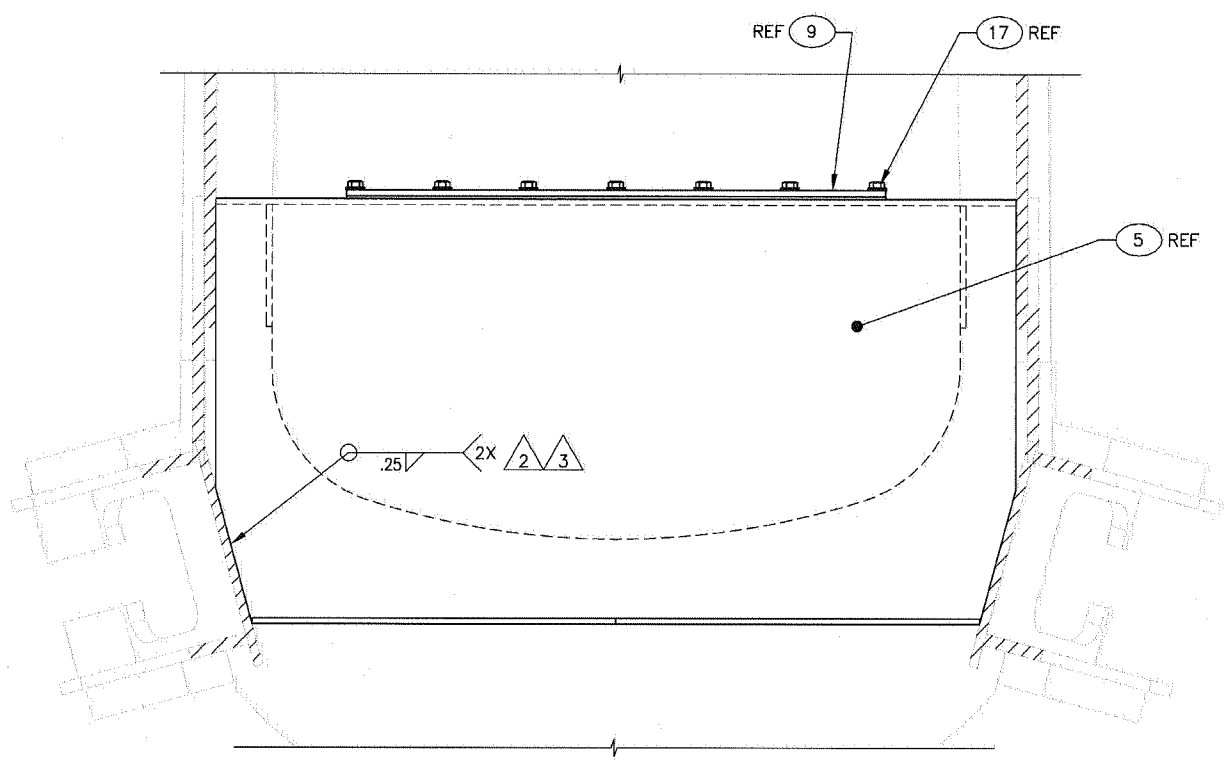
SCALE: NOTED
SHEET 1 OF 4

PROFESSIONAL ENGINEER REGISTERED 9405 7-11-2002 STATE OF IDAHO BLAIR K. GROVER

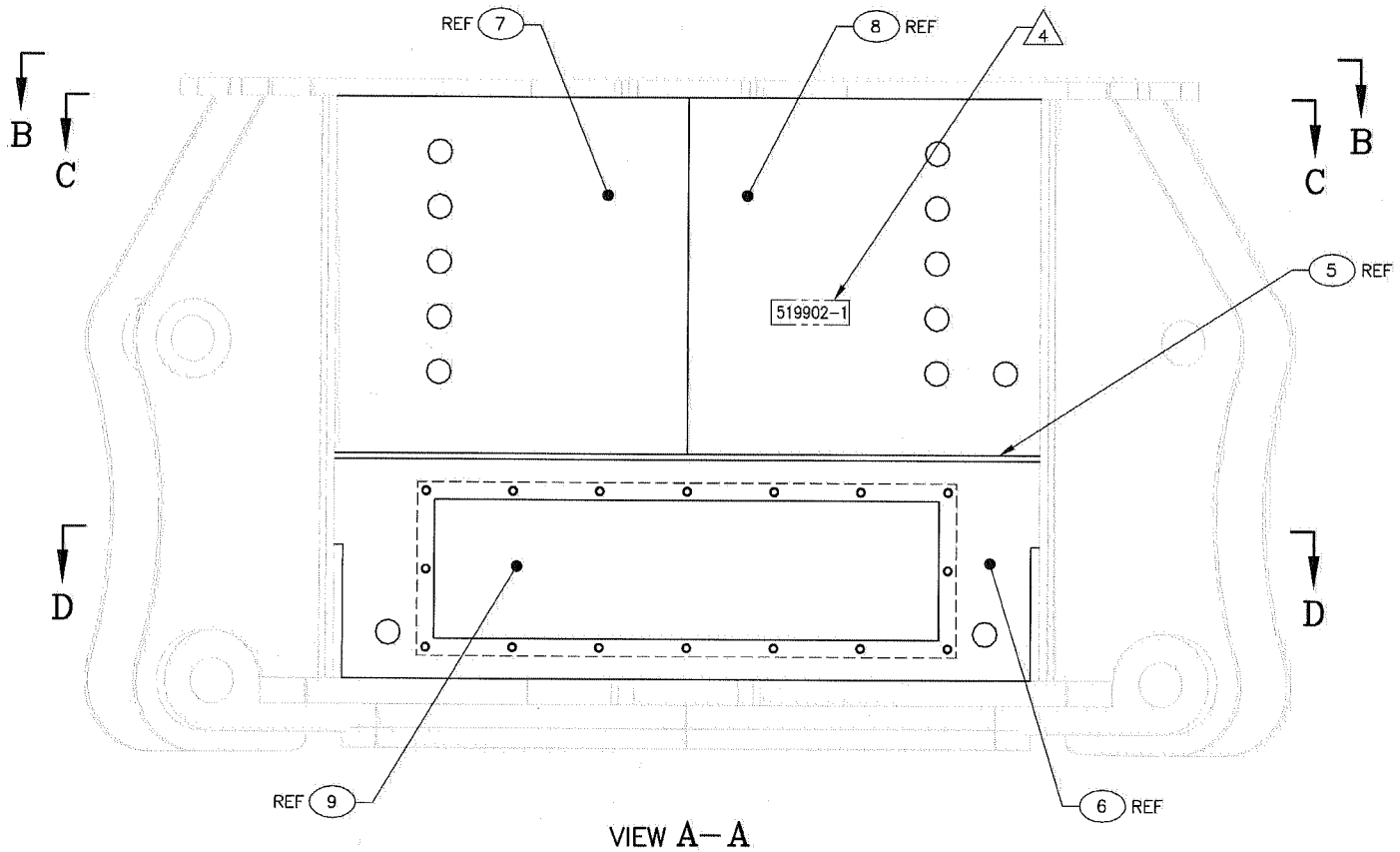
File: 519902.dwg
Path: D:\Keller
Layout Name: Sheet 1
Date: 07/11/02 – 08:05 A.M.
ID: KJ1



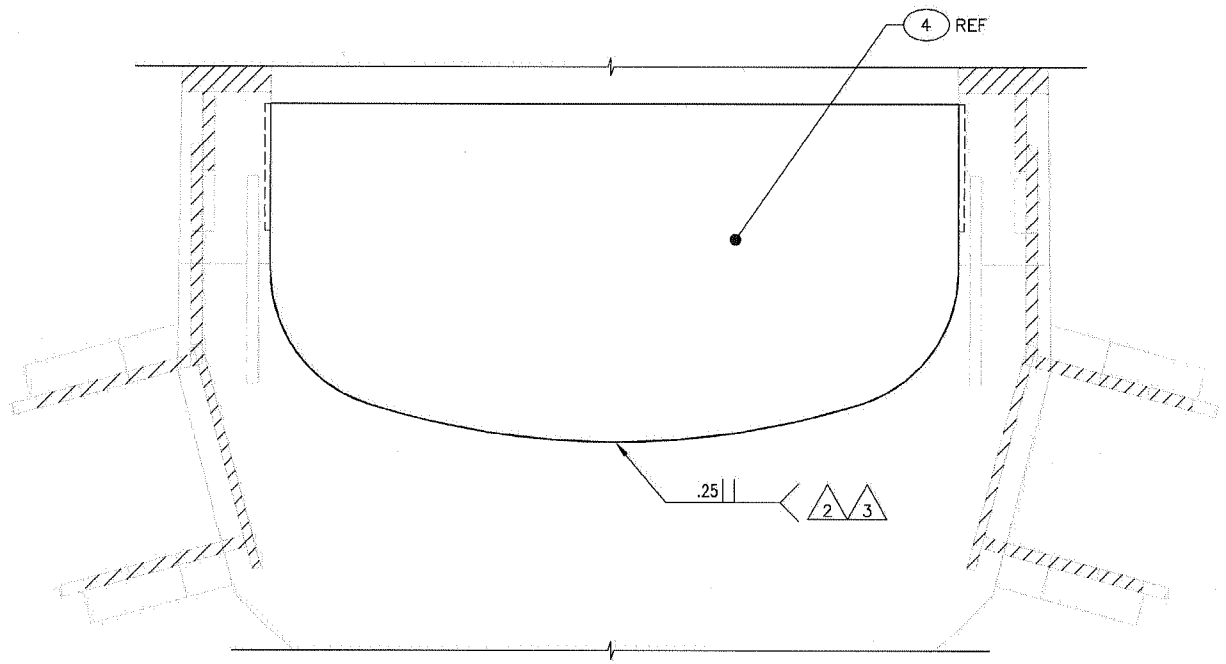
VIEW B–B
EXISTING MAIN FRAME TOP PLATE REMOVED FOR CLARITY



SECTION C–C
ITEMS 7, 8, AND 12 REMOVED FOR CLARITY



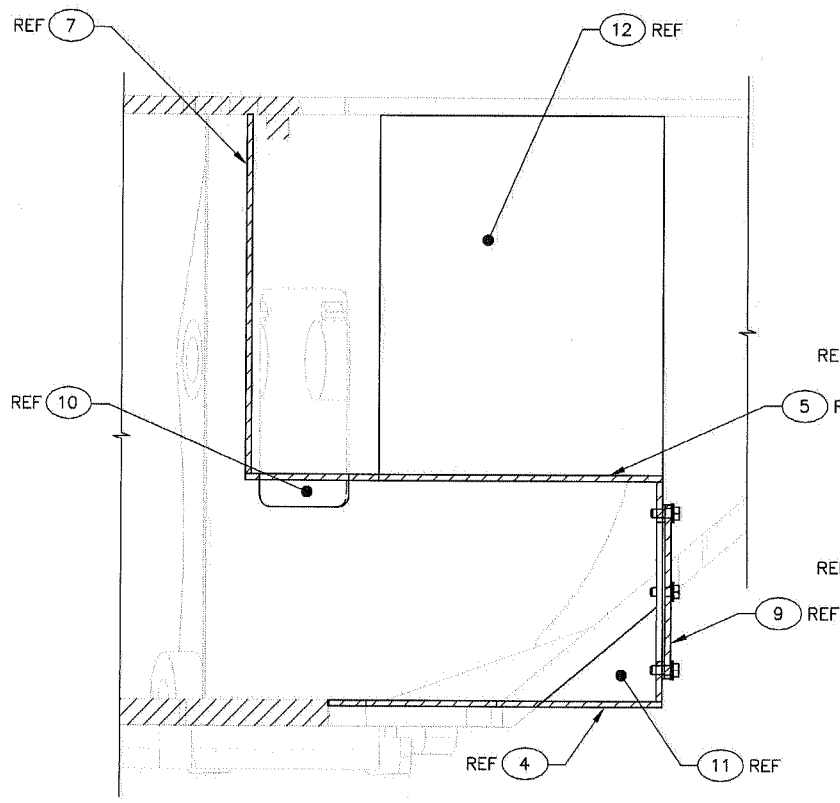
VIEW A–A
EXISTING MAIN FRAME ONLY
SHOWN FOR CLARITY



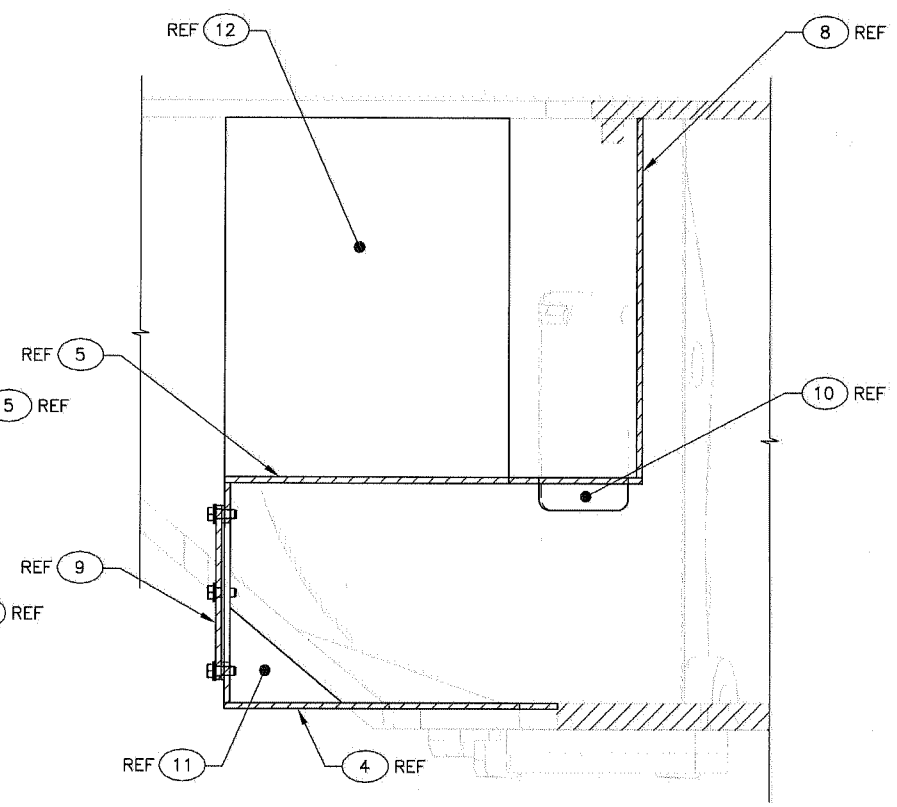
SECTION D–D
ITEMS 6,9,15, AND 17 REMOVED FOR CLARITY

SIZE	CAGE CODE	INDEX CODE NUMBER				DWG-519902	REV
		AREA	TYPE	CL	ORIG		
D	01MF3	098	0671	41	090		
SCALE: 1/4						SHEET 2	

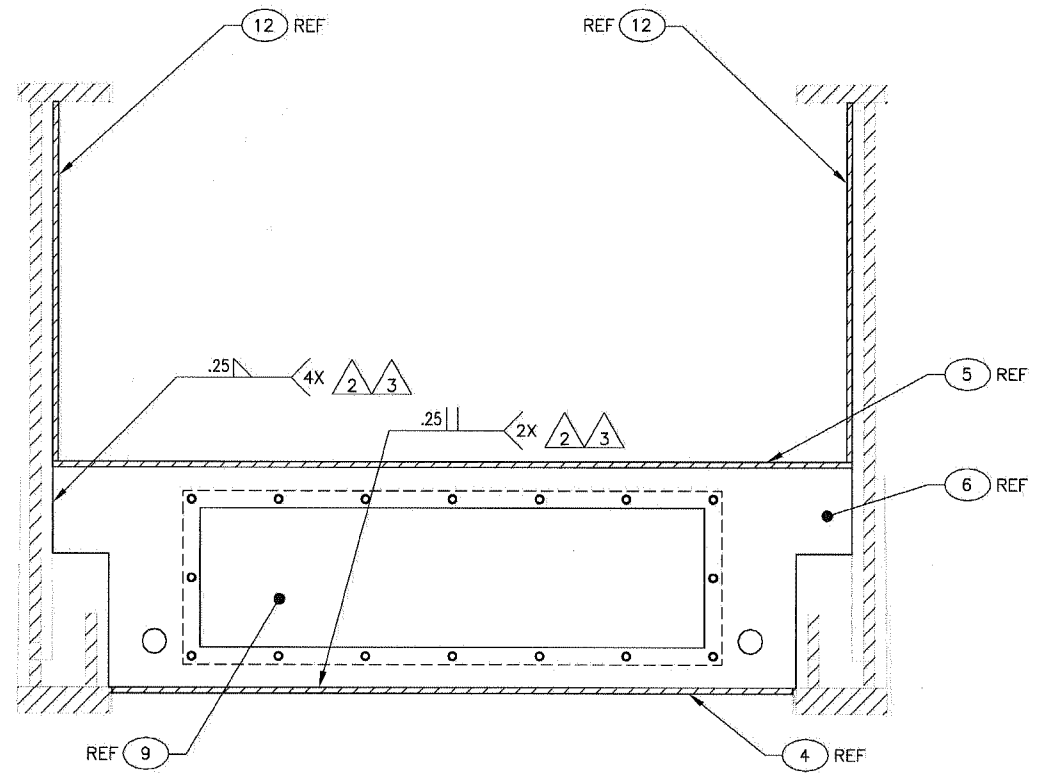
File: 519902.dwg
Path: O:\Keller
Layout Name: Sheet 2
Date: 07/10/02 - 2:45 P.M.
ID: KJ1



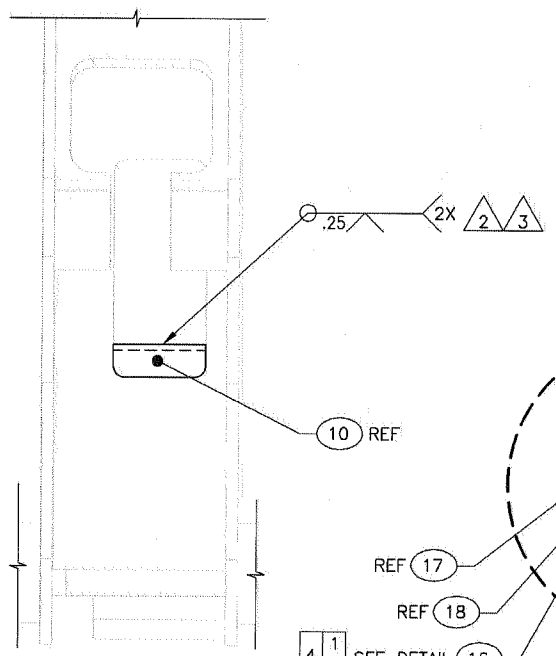
SECTION E–E
ROTATED 90° CW



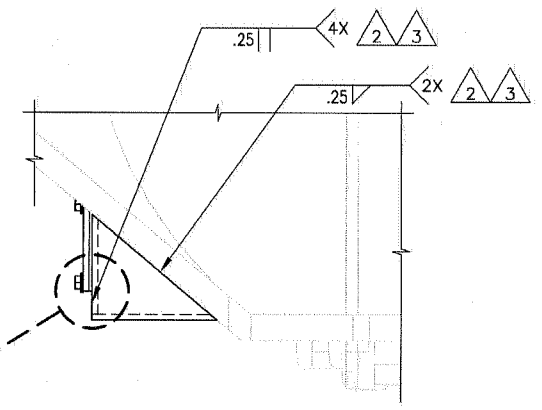
SECTION F–F
ROTATED 90° CCW



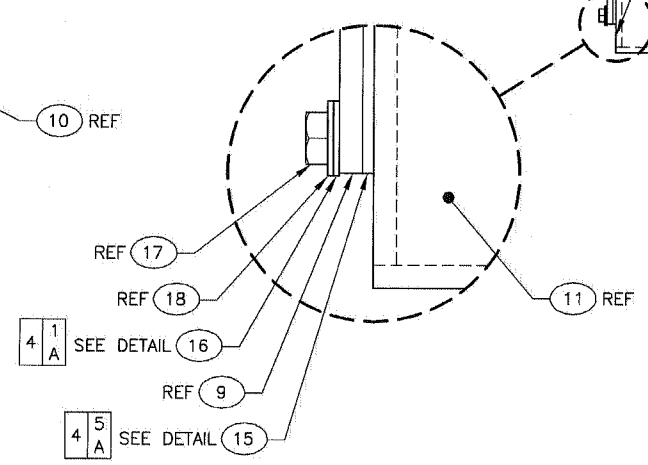
SECTION G–G

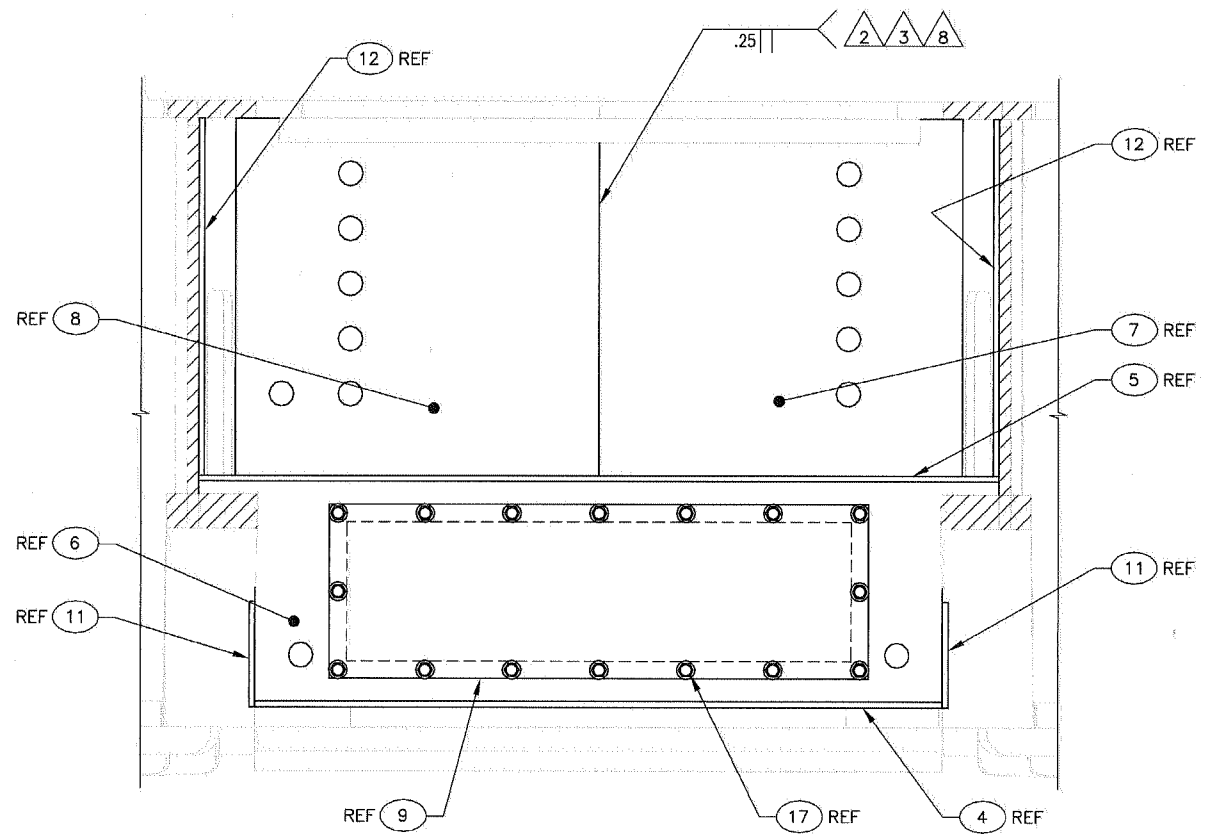


VIEW H–H
ROTATED 74.7° CCW



VIEW J–J
ROTATED 90° CCW

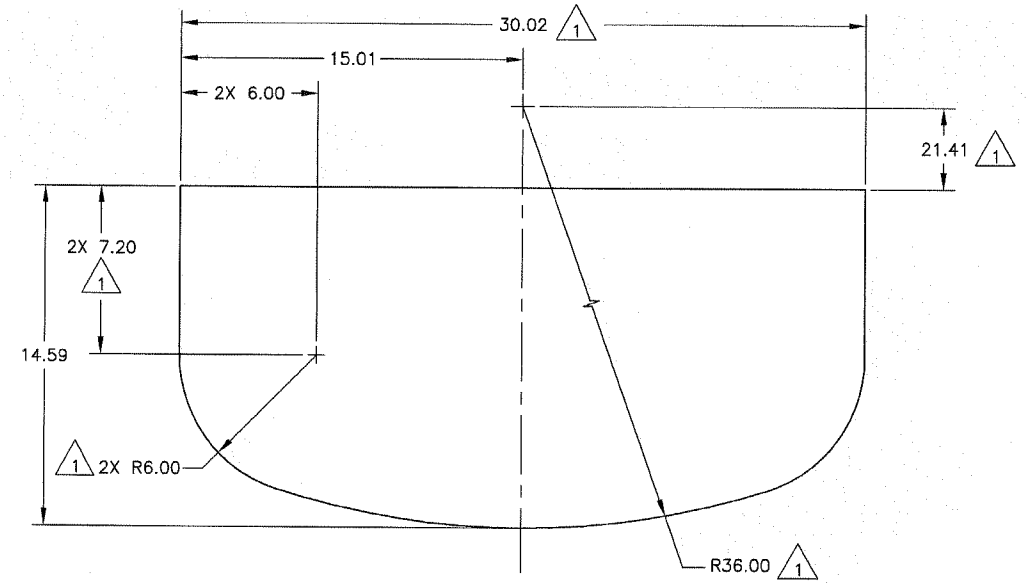




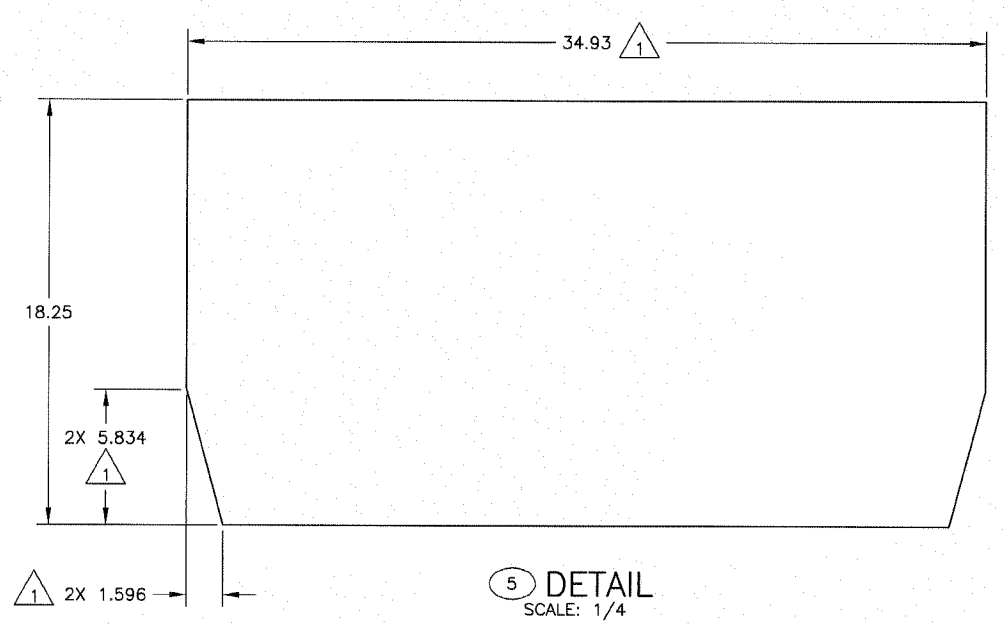
SECTION K–K
ROTATED 180°

SIZE	CAGE CODE	INDEX CODE NUMBER				DWG-519902	REV
		AREA	TYPE	CL	ORIG		
D	01MF3	098	0671	41	090		
SCALE: 1/4						SHEET 3	

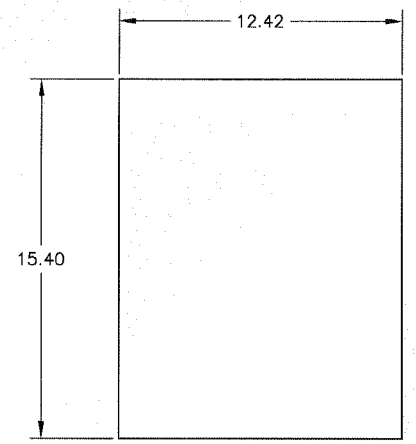
FMT-02-REV 3.1



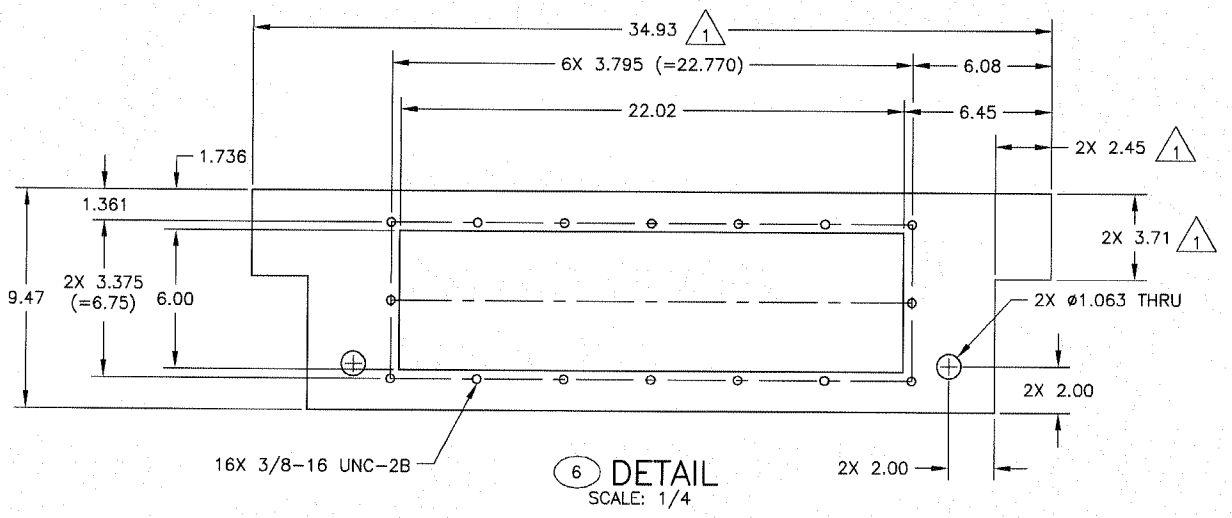
4 DETAIL
SCALE: 1/4



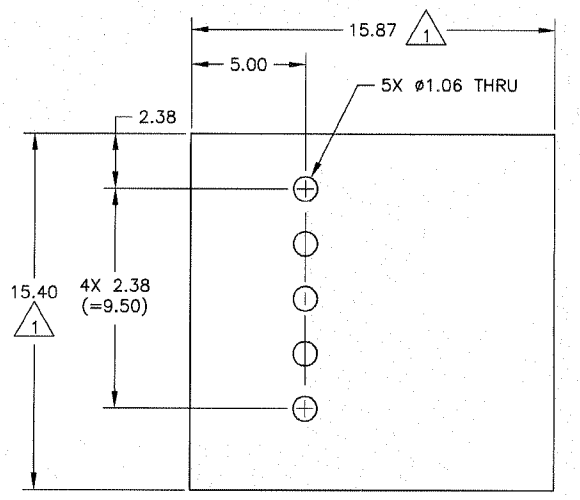
5 DETAIL
SCALE: 1/4



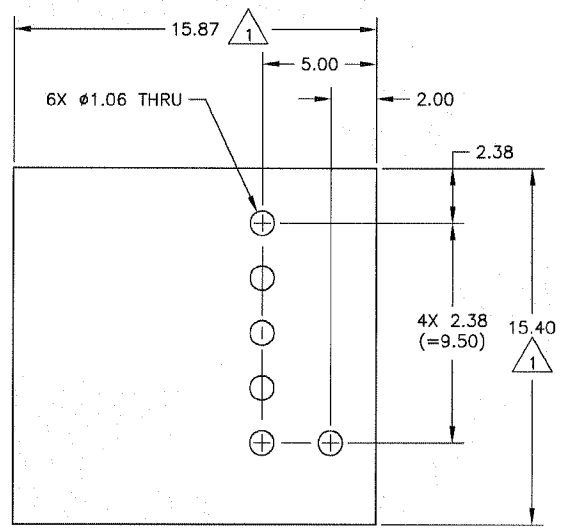
12 DETAIL 1
SCALE: 1/4



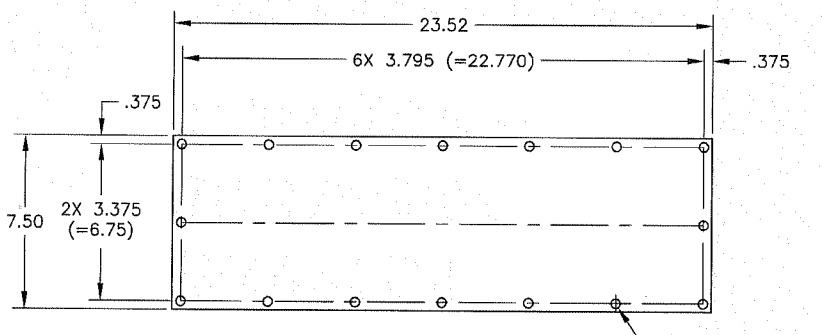
6 DETAIL
SCALE: 1/4



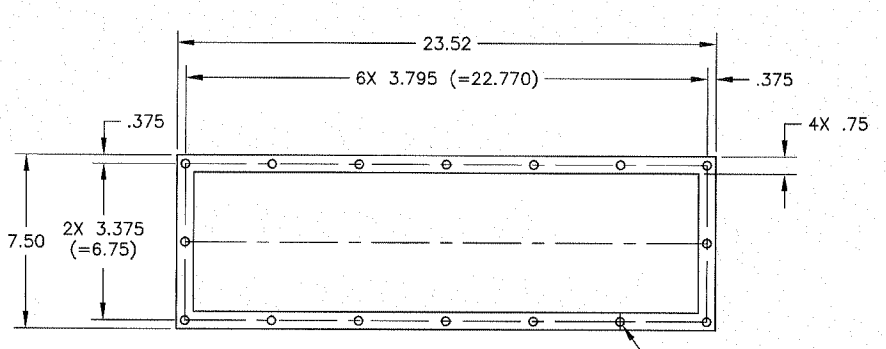
7 DETAIL 8
SCALE: 1/4



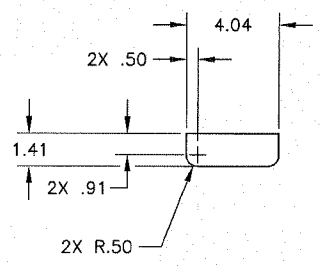
8 DETAIL 8
SCALE: 1/4



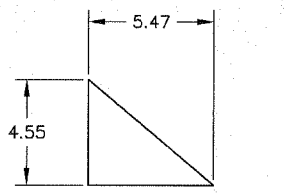
9 DETAIL
SCALE: 1/4



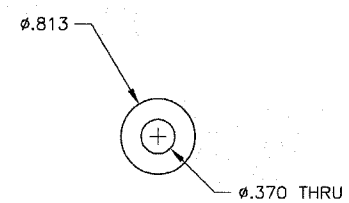
15 DETAIL
SCALE: 1/4



10 DETAIL 1
SCALE: 1/4



11 DETAIL 1
SCALE: 1/4



16 DETAIL
SCALE: 1/1

SIZE	CAGE CODE	INDEX CODE NUMBER					REV
		AREA	TYPE	CL	ORIG		
D	01MF3	098	0671	41	090	DWG-519902	
SCALE: NOTED						SHEET 4	

Layout Name: Sheet 4
Date: 07/10/02 - 2:53 P.M.
ID: KJ1
File: 519902.dwg
Path: O:\Keller

4) DWG: 519903

FMT-D1-REV 3.3

NOTES:

1. WELD AND INSPECT ALL WELDS PER AWS D9.1 USING ITEM 29 OR 30. VISUAL ACCEPTANCE CRITERIA SHALL BE PER AWS D9.1, SECTION 6. EXCEPTION IS NO VISIBLE PORES.

2. PT INSPECT WELD PER ASME BOILER AND PRESSURE VESSEL CODE, SECTION V, ARTICLE 6. ACCEPTANCE CRITERIA:

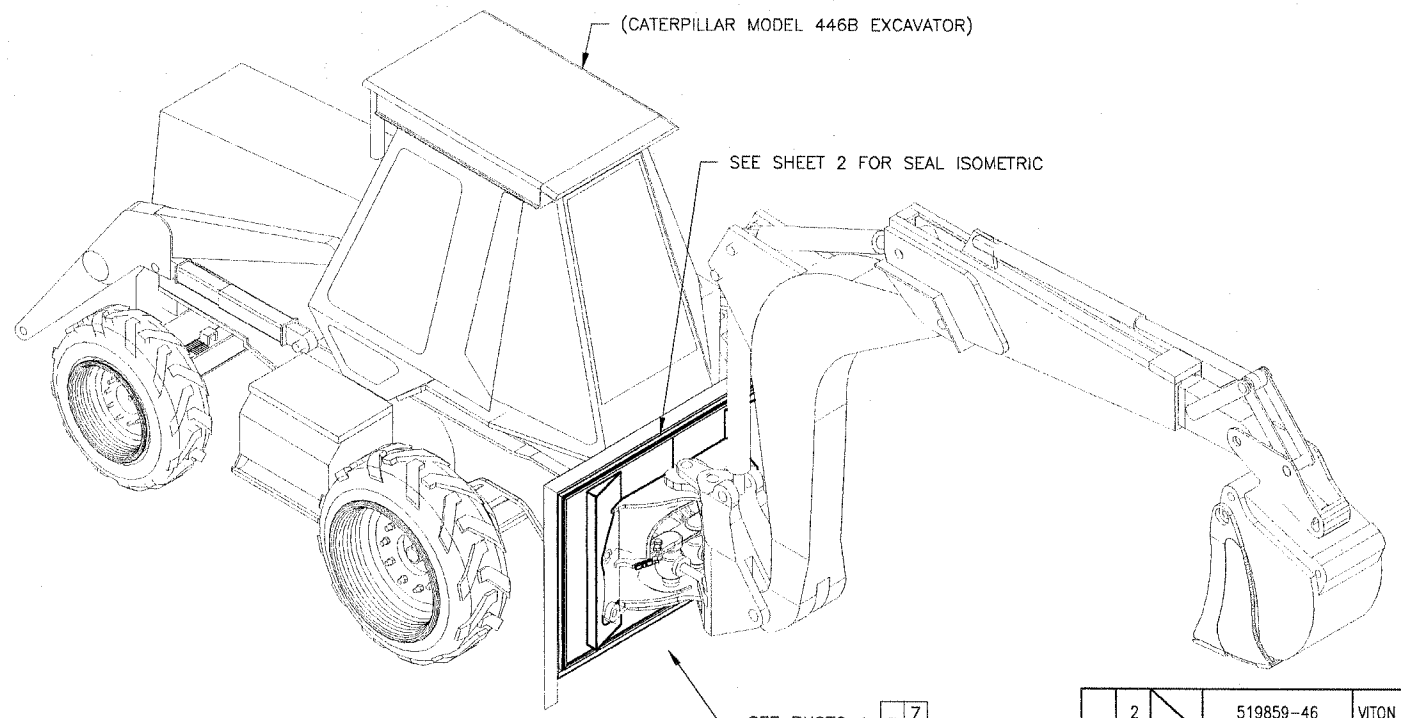
   A– ONLY INDICATIONS WITH MAJOR DIMENSIONS GREATER THAN 1/16" SHALL BE CONSIDERED RELEVANT
   B– THE FOLLOWING RELEVANT INDICATIONS ARE UNACCEPTABLE:
      1– ANY CRACKS OR LINEAR INDICATIONS
      2– ROUNDED INDICATIONS WITH DIMENSIONS GREATER THAN 3/16".
      3– FOUR OR MORE ROUNDED INDICATIONS IN A LINE SEPARATED BY 1/16" OR LESS EDGE–TO–EDGE.
      4– TEN OR MORE ROUNDED INDICATIONS IN ANY SIX SQUARE INCHES OF AREA WHOSE MAJOR DIMENSION IS NO MORE THAN SIX INCHES WITH THE DIMENSIONS BEING TAKEN IN THE MOST UNFAVORABLE LOCATION RELATIVE TO THE INDICATIONS BEING EVALUATED.

3. TORQUE ALL ITEMS 23 AND 24 TO 20 FT/LBS DRY.

4. PER MANUFACTURERS SPECIFICATIONS AFTER FABRICATION IS COMPLETE, PRIME WITH 1 COAT OF ITEM 32 AND PAINT WITH 2 COATS OF ITEM 33.

5. MARK PER STD–7006–3D2 WITH 519903–1 USING 3/4" HIGH CHARACTERS APPROXIMATELY WHERE SHOWN.

6. PRIME ALL EXPOSED SUPPORT SURFACES WITH 1 COAT OF ITEM 32 AND PAINT WITH 2 COATS OF ITEM 33 PER MANUFACTURERS RECOMMENDATIONS.



–1 INSTALLATION

X–REF DRAWINGS

519858
519859

4	3	2	1	SHEET
1	1	1	1	REV

REV STATUS OF SHEETS

REVISIONS		
REV	DESCRIPTION	EFFECTIVE DATE
1	SEE DAR 93628	7–19–2002

	QTY REQD	SAFETY CAT.	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	MATERIAL/SPECIFICATION OR VENDOR NAME	ITEM NO.
	AR	CG	5504	PAINT, COPOLYMERIZED, P–SERIES SILICONE–ALKYD ENAMEL, LIGHT GRAY	KEELER AND LONG	33
	AR	CG	6040	PRIMER, OIL/ALKYD (TRI POLAR)		32
	AR	SS		WELD FILLER METAL	ER70S–X AWS A5.18	31
	AR	SS			E7018 AWS A5.1	30
	2	SS		FULLY THREADED STUD 3/8–16 UNC–2A X 3/4 LG	ASTM A449	29
	2	\	519859–30	RECEPTACLE GASKET		28
	2	SS		WASHER, FLAT, 1/2	CS ASTM F436	27
	2	SS	FK FS 4.5/M12	BULKHEAD FEED–THRU RECEPTACLE	TURCK	26
	1	SS	50925K232	HEX COUPLING	McMASTER–CARR CAT. NO. 108	25
	88	SS		NUT, HEX 3/8–16 UNC–2B	CS ASTM A563 GRADE B	24
	38	SS		BOLT, HEX HD. 3/8–16 UNC–2A X 3/4 LG	CS ASTM A449	23
						22
						21
	1	\	519859–25	FIRESHIELD TOP		20
	20	\	519859–34	GUSSET		19
	2	\	529859–24	VITON PLATE SIDE INSIDE		18
	1	\	519859–22	VITON PLATE BOTTOM INSIDE		17
	1	\	519859–23	VITON PLATE TOP OUTSIDE		16
	1	\	519859–20	UNISTRUT TOP/BOTTOM		15
	1	\	519859–29	GASKET		14
	4	SS		SCREW, FLAT HD. 1/4–20 UNC–2A X 1 1/4 LG	18–8 SST ASTM F593	13
						12
	1	\	519859–4	INNER SUPPORT ASSEMBLY		11
	1	\	519859–42	FIRESHIELD BOTTOM, CENTER		10
	1	\	519859–5	UNISTRUT ASSEMBLY		9
	1	\	519859–7	BOTTOM CHANNEL ASSEMBLY		8
	1	\	519859–6	TOP CHANNEL ASSEMBLY		7
	1	\	519859–2	RIGHT SEAL ASSEMBLY		6
	1	\	519859–1	LEFT SEAL ASSEMBLY		5
	1	\	519859–8	FIRESHIELD ASSEMBLY, LEFT		4
	1	\	519859–3	FIRESHIELD ASSEMBLY, RIGHT		3
						2
		\	SS –1	INSTALLATION		1

PARTS LIST

	QTY REQD	SAFETY CAT.	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	MATERIAL/SPECIFICATION OR VENDOR NAME	ITEM NO.
	2	\	519859–46	VITON PLATE SIDE OUTSIDE ASSEMBLY		40
	1	\	519859–47	VITON PLATE BOTTOM OUTSIDE ASSEMBLY		39
	1	\	519859–43	VITON PLATE TOP INSIDE		38
	2	\	522045–7	SWING STOP SHIM (.25 THK)		37
	2	\	522045–6	SWING STOP SHIM (.22 THK)		36
	2	\	522045–5	SWING STOP SHIM (.19 THK)		35
	2	\	522045–2	SWING STOP SHIM (.09 THK)		34

PARTS LIST

PROFESSIONAL ENGINEER REGISTERED 9405 7-19-2002 STATE OF IDAHO BLAIR K. GROVER

–1	519931
DASH NO.	NEXT ASSY

APPLICATION

DIMENSIONING AND SYMBOLOGY ARE AMERICAN NATIONAL STANDARD
UNLESS OTHERWISE SPECIFIED
SURFACE ROUGHNESS 125
DIMENSIONS AND TOLERANCES ARE IN INCHES
TOLERANCES: .X = ± .1
DECIMALS: .XX = ± .03
.XXX = ± .010
FRACTIONS ± 1/8
ANGULAR ± 2°
DO NOT SCALE DRAWING

SUBCONTRACT NO.
REQUESTER: SA DAVIES
DESIGN: B GROVER
DRAWN: BUBBA
PROJECT NO. 021052
SPEC CODE
FOR REVIEW/APPROVAL SIGNATURES SEE DAR NO. 93345
EFFECTIVE DATE: 7–11–2002

INEEL Idaho National Engineering & Environmental Laboratory BECHTEL BWXT IDAHO, LLC

OU 7–10
GLOVEBOX EXCAVATOR METHOD PROJECT
EXCAVATOR MODIFICATIONS
OUTER SEAL INSTALLATION

SIZE	CAGE CODE	INDEX CODE NUMBER AREA	TYPE	CI	ORG	DWG–	REV
D	01MF3	098	0671	41	090	519903	1

SCALE: NONE
SHEET 1 OF 4

Layout Name: Sheet 1
Date: 07/19/02 – 1:42 P.M.
ID: KJT
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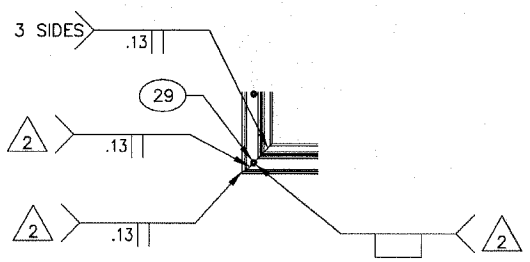
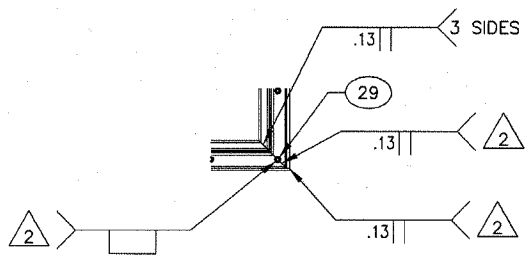
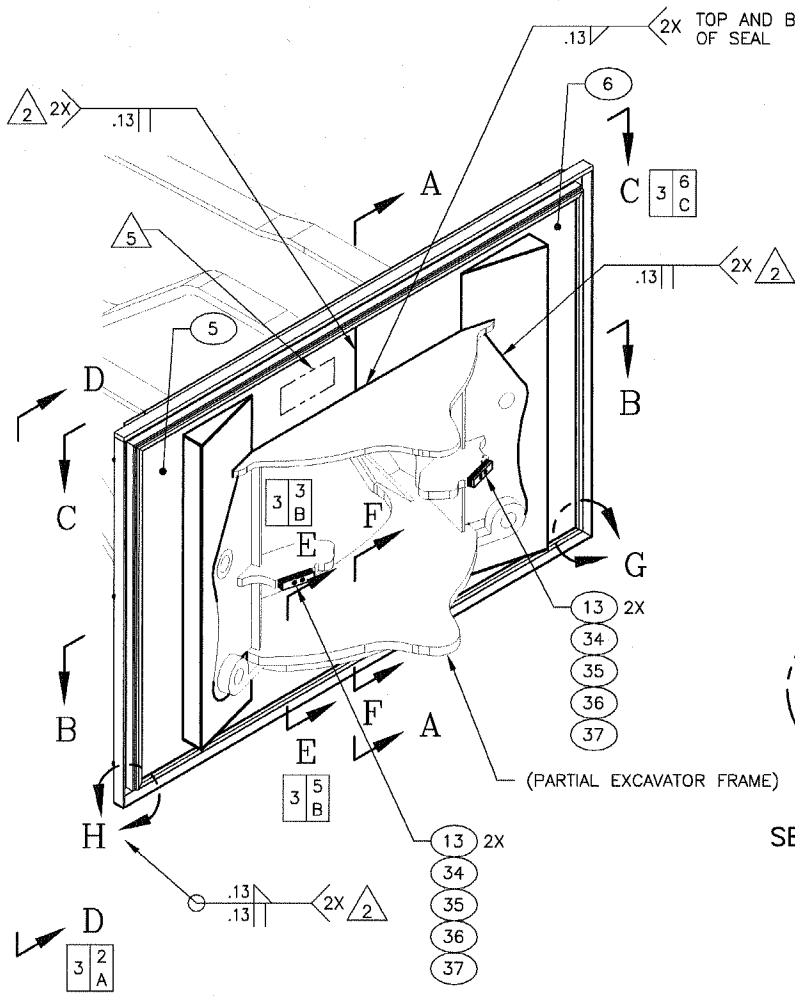
Path: C:\CD_SEAL



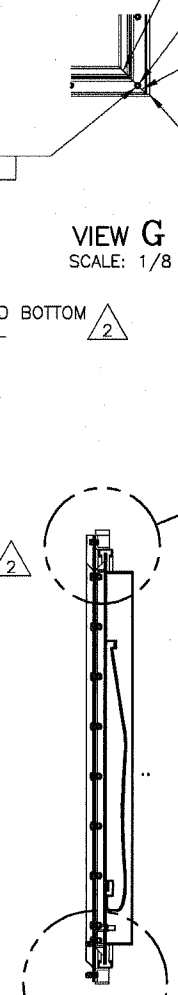
VIEW H
SCALE: 1/8



VIEW G
SCALE: 1/8



ISOMETRIC VIEW
SCALE: NONE



SECTION A–A
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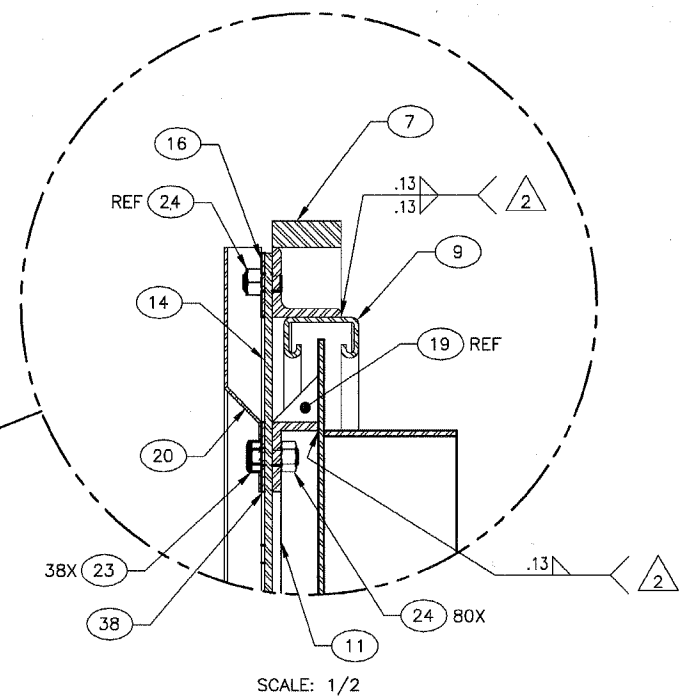

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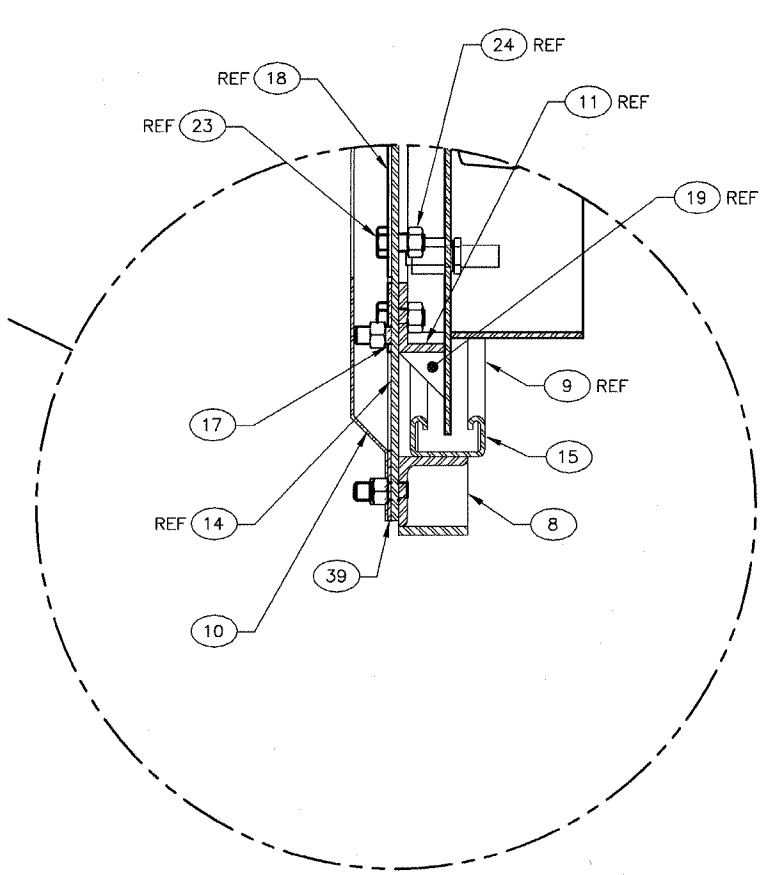
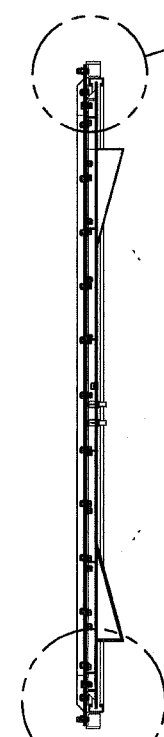
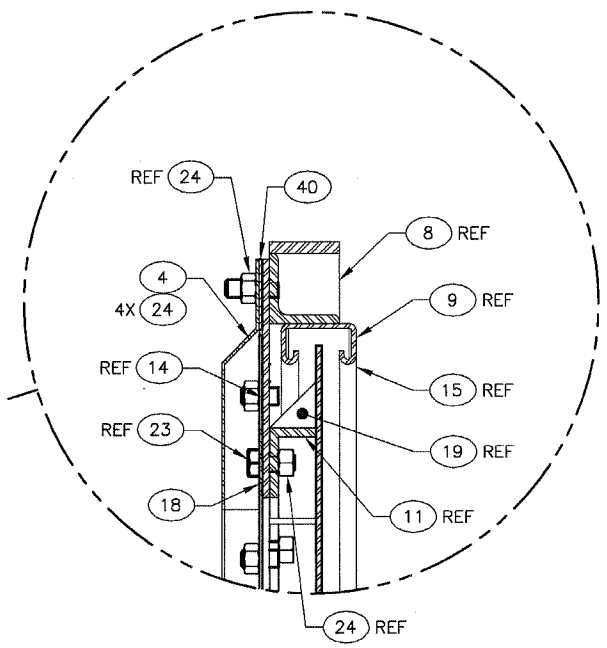


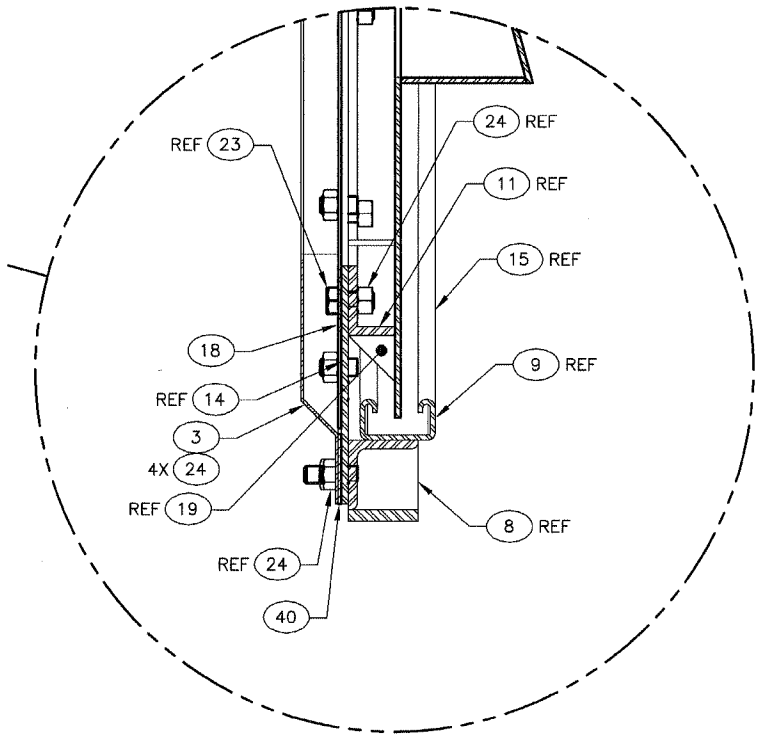
SCALE: 1/2



SECTION B–B
SCALE: 1/10
ROTATED 90° CCW



SCALE: 1/2



SCALE: 1/2

SIZE	CAGE CODE	INDEX CODE NUMBER					DWG-	REV
		AREA	TYPE	CL	ORIG			
D	01MF3	098	0671	41	090		519903	1
SCALE: NOTED						SHEET	2	

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Path: 01\ED_SEAL
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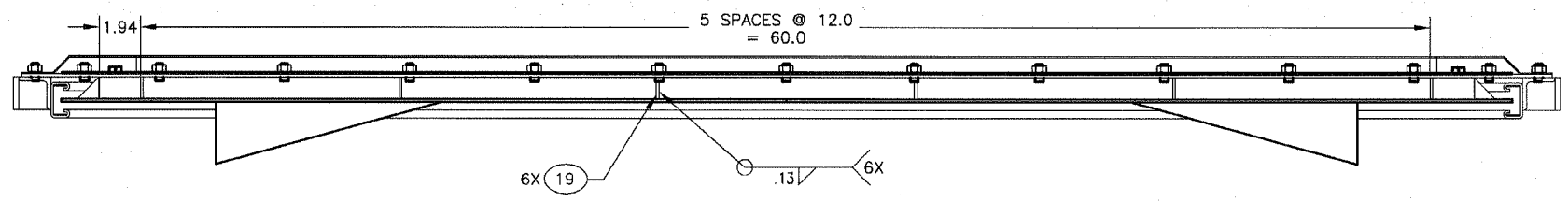
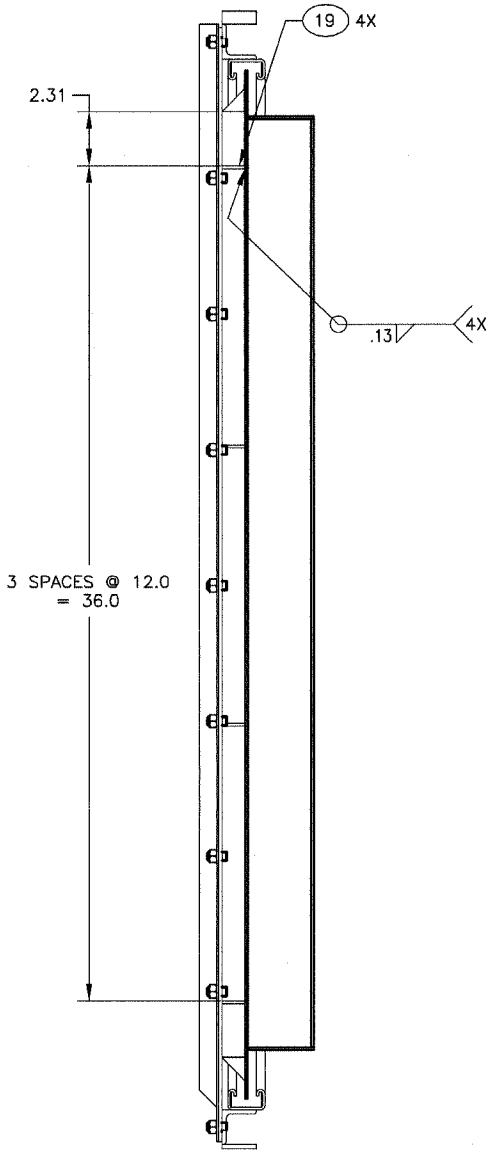
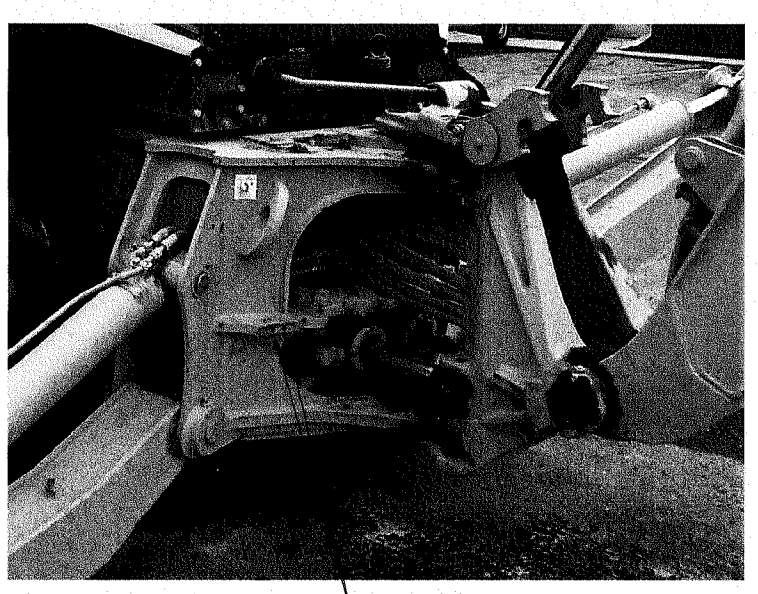
Date: 07/19/02 - 1:50 P.M.
ID: KJ1



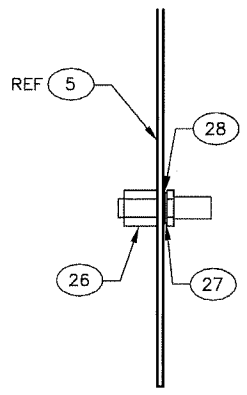
SECTION C–C
SCALE: 1/4
BOTTOM OF SEAL SIMILAR
ITEMS 7 AND 9 REMOVED FOR CLARITY





1/4-20 UNC-2B ↧1.0
CENTER ITEM 522045-7 BOTH VERTICALLY AND HORIZONTALLY ON EXCAVATOR TAB AND USE AS TEMPLATE. BOTH SIDES OF EXCAVATOR.

PHOTO 1



SECTION E–E
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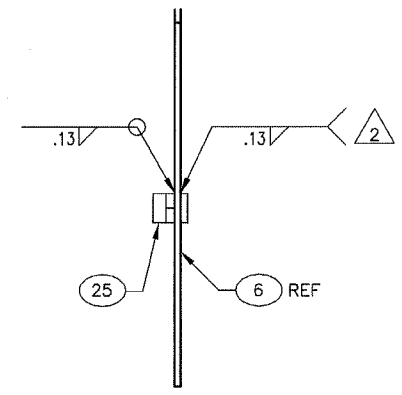
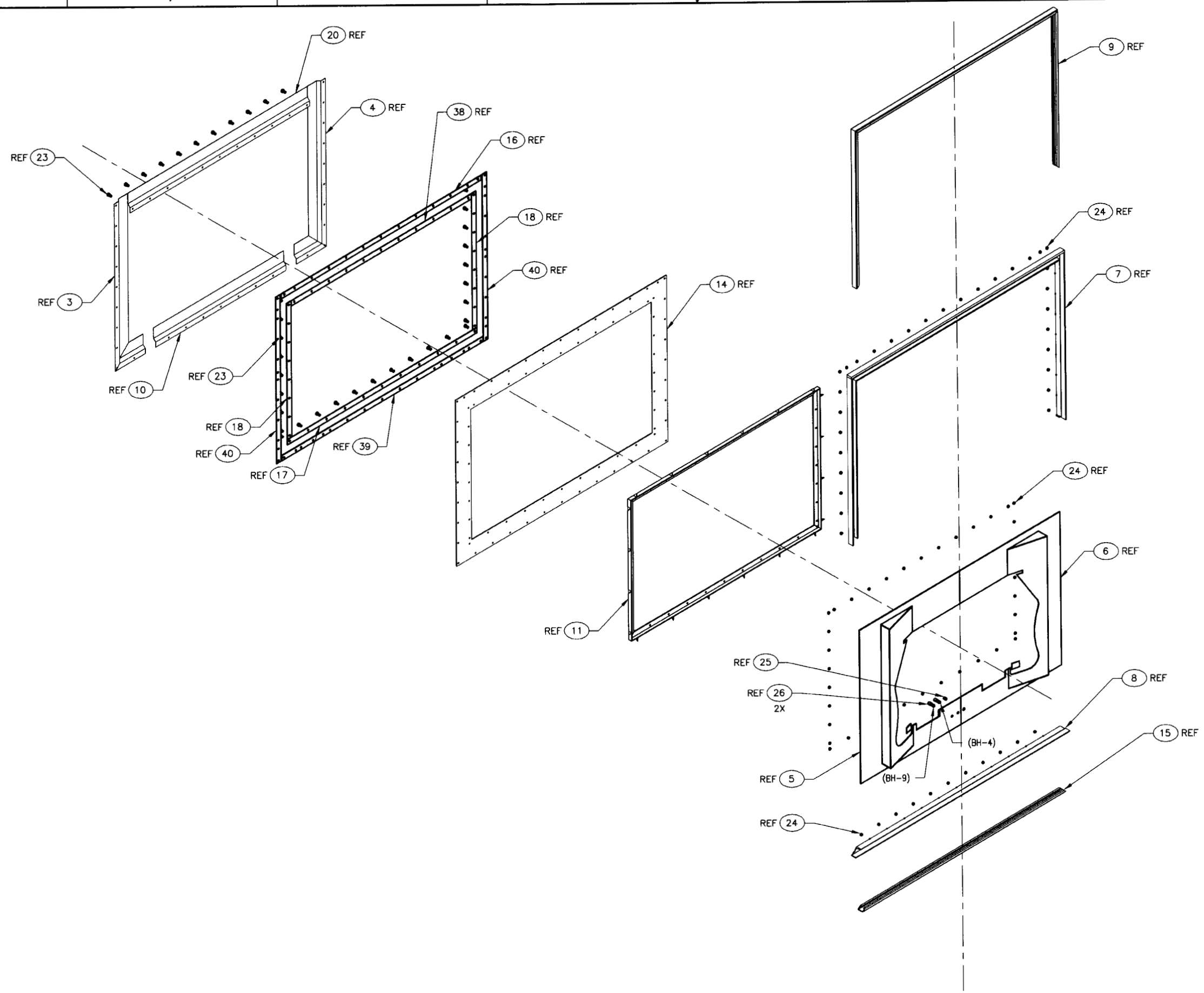
2X



SECTION F–F
SCALE: 1/2

SECTION D–D
SCALE: 1/4
OPPOSITE SIDE SIMILAR
ITEMS 7 & 9 REMOVED FOR CLARITY

SIZE	CAGE CODE	INDEX CODE NUMBER						REV
		AREA	TYPE	CI	CRIG			
D	01MF3	098	0671	41	090	DWG-519903		1
SCALE: NOTED							SHEET 3	



EXPLODED VIEW
SHOWN FOR REFERENCE ONLY

SIZE	CAGE CODE	INDEX CODE NUMBER					REV
		AREA	TYPE	CL	ORIG		
D	01MF3	098	0671	41	090	DWG-519903	1

SCALE: NONE SHEET 4

5) DWG: 519906

FMT-01-REV 3.3

NOTES:

1. REMOVE ALL BURRS AND SHARP EDGES.
2. ALL FILLET RADII TO BE .03 MAX UNLESS OTHERWISE NOTED.
3. WELD PER AWS D1.1 USING WELD FILLER METAL ITEMS 41, 42 OR 43.
4. (Q) VISUALLY INSPECT ALL WELDS WITH ACCEPTANCE PER AWS D1.1-2002 STATICALLY LOADED CONNECTIONS.
5. (Q) PT INSPECT WELD PER ASME BOILER AND PRESSURE VESSEL CODE, SECTION V, ARTICLE 6. ACCEPTANCE CRITERIA:

   A- ONLY INDICATIONS WITH MAJOR DIMENSIONS GREATER THAN 1/16" SHALL BE CONSIDERED RELEVANT
   B- THE FOLLOWING RELEVANT INDICATIONS ARE UNACCEPTABLE:
   1- ANY CRACKS OR LINEAR INDICATIONS
   2- ROUNDED INDICATIONS WITH DIMENSIONS GREATER THAN 3/16".
   3- FOUR OR MORE ROUNDED INDICATIONS IN A LINE SEPARATED BY 1/16" OR LESS EDGE-TO-EDGE.
   4- TEN OR MORE ROUNDED INDICATIONS IN ANY SIX SQUARE INCHES OF AREA WHOSE MAJOR DIMENSION IS NO MORE THAN SIX INCHES WITH THE DIMENSIONS BEING TAKEN IN THE MOST UNFAVORABLE LOCATION RELATIVE TO THE INDICATIONS BEING EVALUATED.

6. (Q) PRIME ALL EXPOSED SUPPORT SURFACES WITH 1 COAT OF ITEM 44 AND PAINT WITH 2 COATS OF ITEM 45 PER MANUFACTURERS RECOMMENDATIONS.
7. (Q) PART MARK ASSEMBLIES IN 1/2 INCH HIGH CHARACTERS WITH ITEM 45 PER PAINT MANUFACTURERS RECOMMENDATIONS AT APPROXIMATE LOCATION SHOWN. MARK WITH 519906 AND APPLICABLE DASH NUMBER.
8. SURFACES SHALL BE CLEANED OF WELD FLUX, OIL, GREASE, SHOP SOIL AND VISIBLE RUST PRIOR TO PAINTING.
9. FINAL DIMENSION ESTABLISHED AT INSTALLATION PRIOR TO INSTALLATION AND WELDING OF ITEMS 20 & 21.
10. (Q) FIELD VERIFY DIMENSION TO PROCURED BACKHOE LOADER.
11. (Q) FIELD LOCATE HOLES TO MATCH PROCURED BACKHOE LOADER. MAINTAIN MINIMUM EDGE MARGIN OF 2.00 WITH ASSEMBLY ORIENTED VERTICALLY AS SHOWN ON DWG. 519933.
12. (Q) LINE BORE HOLES TO MATCH PROCURED BACKHOE LOADER BEARING INSIDE DIAMETER.
13. (Q) FIELD VERIFY AGAINST PROCURED BACKHOE TO ENSURE PLATE EDGE IS PERPENDICULAR TO CENTERLINE AXIS OF BACKHOE.
14. (Q) FIELD VERIFY AND ESTABLISH DIMENSION TO PROCURED BACKHOE. FINAL GAP BETWEEN ITEM 15 AND BACKHOE MOUNTS TO BE LESS THAN .03".
15. CERTIFICATE OF CONFORMANCE TO BE SUPPLIED WITH ALL CARBON STEEL.

X-REF DRAWINGS

519670
519858

7	6	5	4	3	2	1	SHEET
1	1	1	1	1	1	1	REV

REV STATUS OF SHEETS

REVISIONS		
REV	DESCRIPTION	EFFECTIVE DATE:
1	SEE DAR-93638	7/22/2002

-9	-8	-7	-6	-5	-4	-3	-2 QTY REQD	-1 CAT.	SAFETY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	MATERIAL/SPECIFICATION OR VENDOR NAME	ITEM NO.
AR	AR	AR	AR	AR	AR	AR	AR	CG		5504	PAINT, COPOLYMERIZED, P-SERIES SILICONE-ALKYD ENAMEL, LIGHT GRAY	KEELER AND LONG	45
AR	AR	AR	AR	AR	AR	AR	AR	CG		6040	PRIMER, OIL/ALKYD (TRI POLAR)		44
AR	AR	AR	AR	AR	AR	AR	AR	SS			WELD FILLER METAL	E71T-1 AWS A5.20	43
												ER70S-X AWS A5.18	42
												E71T-8 AWS A5.20	41
			4					LSC			NUT, HEX 3/4-10 UNC-2B	CARBON STEEL ASTM A563 GRADE B	40
			4					CG			WASHER, FLAT, 3/4	CARBON STEEL ASTM F436 TYPE 1	39
			4					LSC			BOLT, HEX HD. 3/4-10 UNC-2A X 3.0 LG.	CARBON STEEL ASTM A325	38
				1				LSC			NUT, HEX 1/2-13 UNC-2B	CARBON STEEL ASTM A563 GRADE B	37
				1				CG			WASHER, FLAT, 1/2	CARBON STEEL ASTM F436 TYPE 1	36
				1				LSC			BOLT, HEX HD. 1/2-13 UNC-2A X 5.0 LG.	CARBON STEEL ASTM A325	35
			1					LSC		-34	TOP PLATE	PLATE, 1.0 THK CARBON STEEL ASTM A36	34
			2					LSC		-33	SIDE PLATE		33
													32
													31

PARTS LIST

-9	-8	-7	-6	-5	-4	-3	-2 QTY REQD	-1 CAT.	SAFETY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	MATERIAL/SPECIFICATION OR VENDOR NAME	ITEM NO.
			2					LSC		-30	SMALL GUSSET	PLATE, 1.0 THK CARBON STEEL ASTM A36	30
			1					LSC		-29	AXLE BASE PLATE		29
			1					LSC		-28	BASE PLATE		28
			2					LSC		-27	LARGE GUSSET	PLATE, 2.0 THK CARBON STEEL ASTM A36	27
	1				1			LSC		-26	REAR LEG GUSSET	PLATE, 1.0 THK CARBON STEEL ASTM A36	26
	1				1			LSC		-25	LEG BASE		25
			1					LSC		-24	VERTICAL SUPPORT	PLATE, 2.0 THK CARBON STEEL ASTM A36	24
			2					LSC		-23	AXLE CLAMP PLATE	PLATE, 1.0 THK CARBON STEEL ASTM A36	23
				2				LSC		-22	MOUNT	PLATE, 2.50 THK CARBON STEEL ASTM A36	22
				1				LSC		-21	LARGE ARM	HSS, 4.5 X 4.5 X .25 WALL SMLS CARBON STEEL ASTM 500, GR B	21
				1				LSC		-20	SMALL ARM	HSS, 4 X 4 X .25 WALL SMLS CARBON STEEL ASTM 500, GR B	20
				1				LSC		-19	SMALL MOUNT PLATE	PLATE, .50 THK CARBON STEEL ASTM A36	19
				1				LSC		-18	LARGE MOUNT PLATE		18
1					1			LSC		-17	HORIZONTAL PLATE	PLATE, 2.0 THK CARBON STEEL ASTM A36	17
2					2			LSC		-16	VERTICAL PLATE		16
	1					1		LSC		-15	LEG	PLATE, 5.0 THK CARBON STEEL ASTM A36	15
		1				1		LSC		-14	SUPPORT PLATE	PLATE, 1.0 THK CARBON STEEL ASTM A36	14
		1				1		LSC		-13	LEG PLATE		13
		1				1		LSC		-12	LEG	HSS, 2.0 X 2.0 X .25 WALL CARBON STEEL ASTM 500, GR B	12
							1	SS		-11	BODY	PIPE, 3" SCH. 40 CARBON STEEL ASTM A53	11
							AR	SS		-10	CAP	PLATE, .25 THK CARBON STEEL ASTM A36	10
								LSC		-9	FRONT SUPPORT ASSEMBLY, OPPOSITE		9
								LSC		-8	REAR SUPPORT ASSEMBLY, OPPOSITE		8
								LSC		-7	BRACE ASSEMBLY, OPPOSITE		7
								LSC		-6	FRONT AXLE SUPPORT ASSEMBLY		6
								LSC		-5	FRONT ADJUSTMENT ASSEMBLY		5
								LSC		-4	FRONT SUPPORT ASSEMBLY, SHOWN		4
								LSC		-3	REAR SUPPORT ASSEMBLY, SHOWN		3
								LSC		-2	BRACE ASSEMBLY, SHOWN		2
								SS		-1	CAP SEAL ASSEMBLY		1

PARTS LIST

-9	-8	-7	-6	-5	-4	-3	-2	-1	NEXT ASSY
								-7	519933
								-6	519933
								-5	519933
								-4	519933
								-3	519933
-9	519933							-2	519933
-8	519933							-1	519933
DASH NO.	NEXT ASSY							DASH NO.	NEXT ASSY

APPLICATION | APPLICATION

PROFESSIONAL ENGINEER REGISTERED 10190 7/22/02 STATE OF IDAHO STEVEN J. MOODY

DIMENSIONING AND SYMBOLOGY ARE AMERICAN NATIONAL STANDARD
UNLESS OTHERWISE SPECIFIED
SURFACE ROUGHNESS 125
DIMENSIONS AND TOLERANCES ARE IN INCHES
TOLERANCES: X = ± .1
DECIMALS: .XX = ± .03
.XXX = ± .010
FRACTIONS ± 1/8
ANGULAR ± 2°
DO NOT SCALE DRAWING

SUBCONTRACT NO. N/A
REQUESTER: SA DAVIES
DESIGN: S MOODY
DRAWN: BUBBA
PROJECT NO. 021052
SPEC CODE
FOR REVIEW/APPROVAL SIGNATURES SEE DAR NO. 93345
EFFECTIVE DATE: 7-11-2002

INEEL Idaho National Engineering & Environmental Laboratory BECHTEL BWXT IDAHO, LLC

OU 7-10
GLOVEBOX EXCAVATOR METHOD PROJECT
BACKHOE ANCHORAGE STRUCTURE
DETAILS AND ASSEMBLIES

SIZE D | CAGE CODE 01MF3 | INDEX CODE NUMBER AREA 098 | TYPE 0671 | CI 61 | ORIG 090 | DWG-519906 | REV 1
SCALE: NONE | SHEET 1 OF 7

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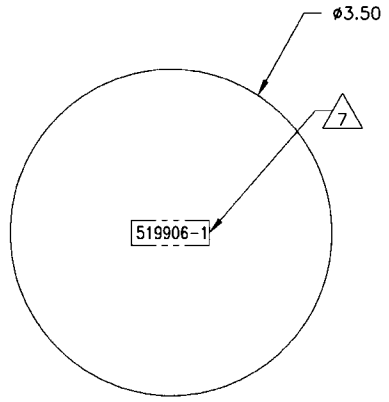
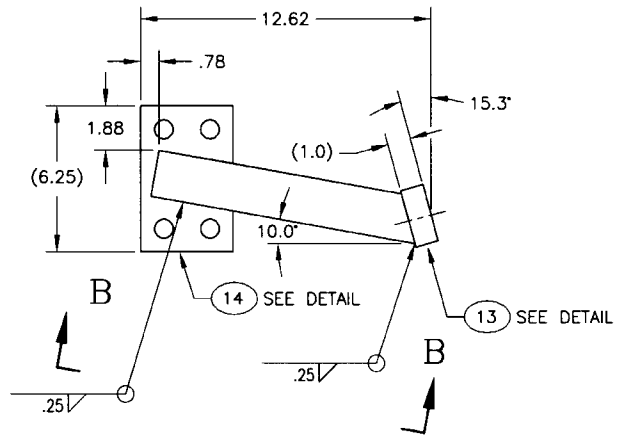
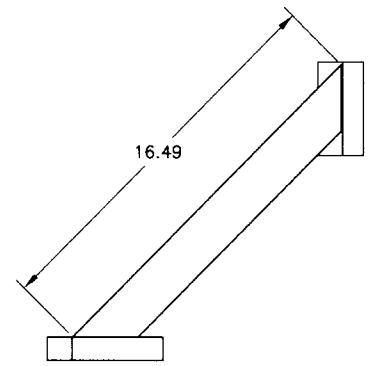
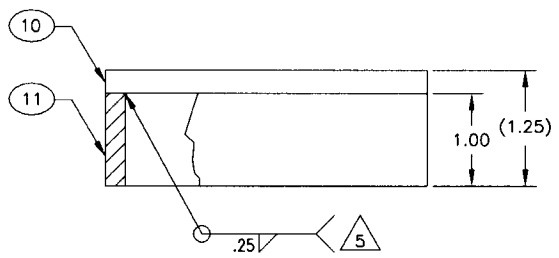
Date: 07/22/02 - 10:44 A.M.
ID: BUB4
File: 519906-1.dwg
Path: P:\revisions



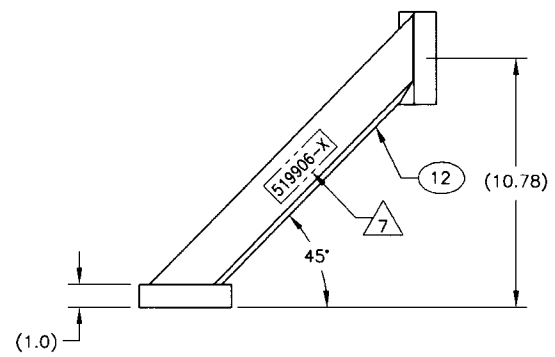




VIEW B–B

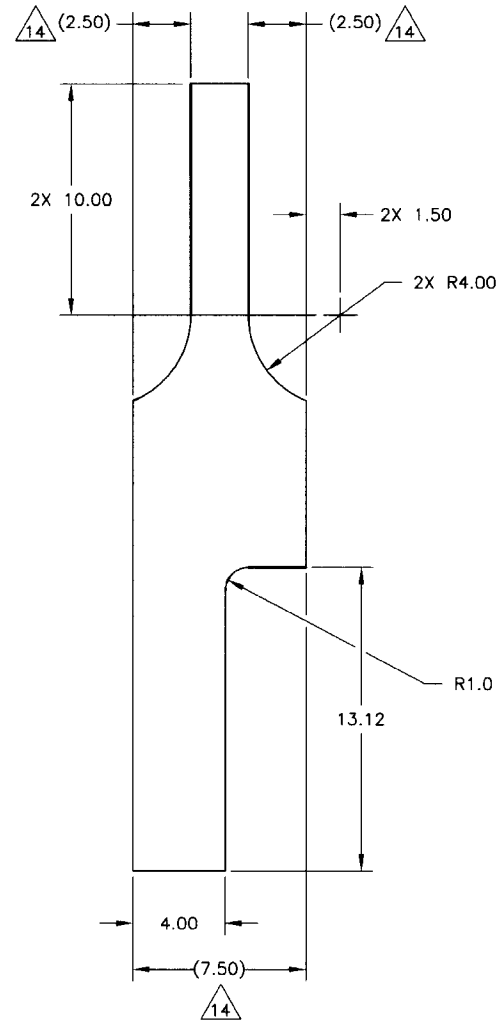


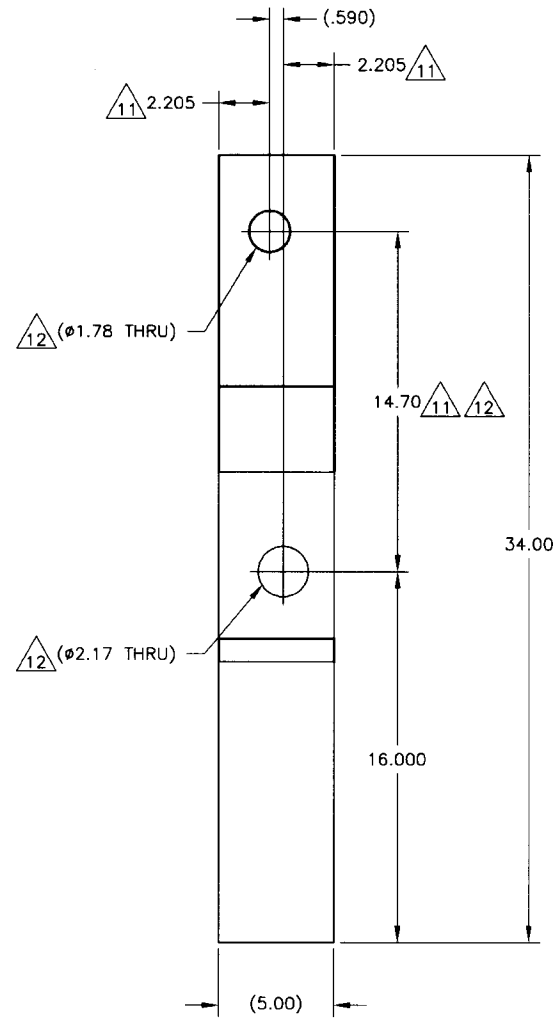
–1 ASSEMBLY
SCALE: 1/1

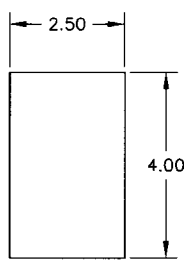


–2 ASSEMBLY SHOWN
SCALE: 1/4

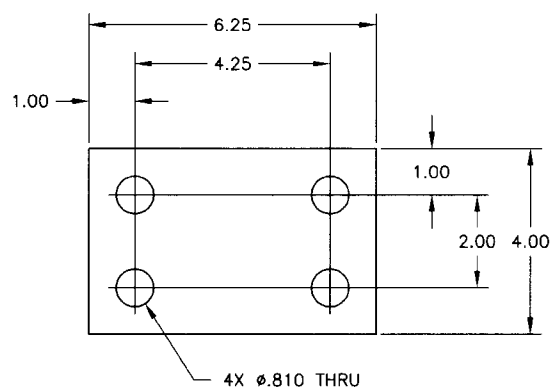
–7 ASSEMBLY OPPOSITE
SCALE: 1/4







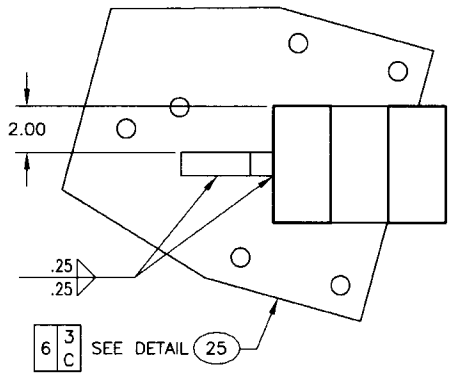
13 DETAIL
SCALE: 1/2

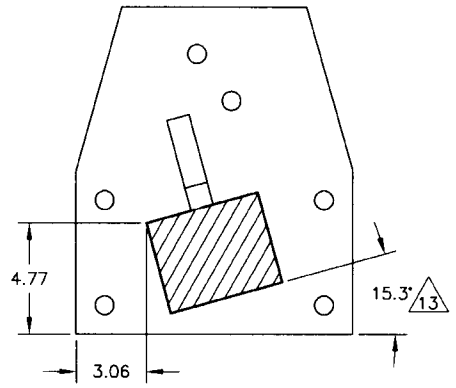


14 DETAIL
SCALE: 1/2

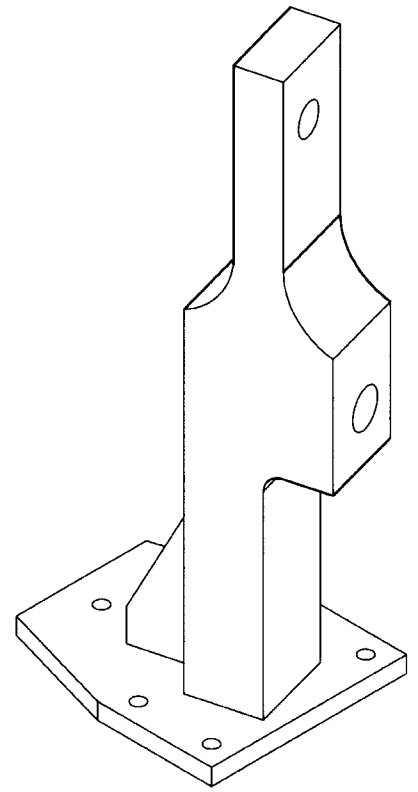
15 DETAIL
SCALE: 1/4

SIZE	CAGE CODE	INDEX CODE NUMBER AREA	TYPE	CL	ORIG	DWG-	REV
D	01MF3	098	0671	61	090	519906	1
SCALE: NOTED						SHEET 2	

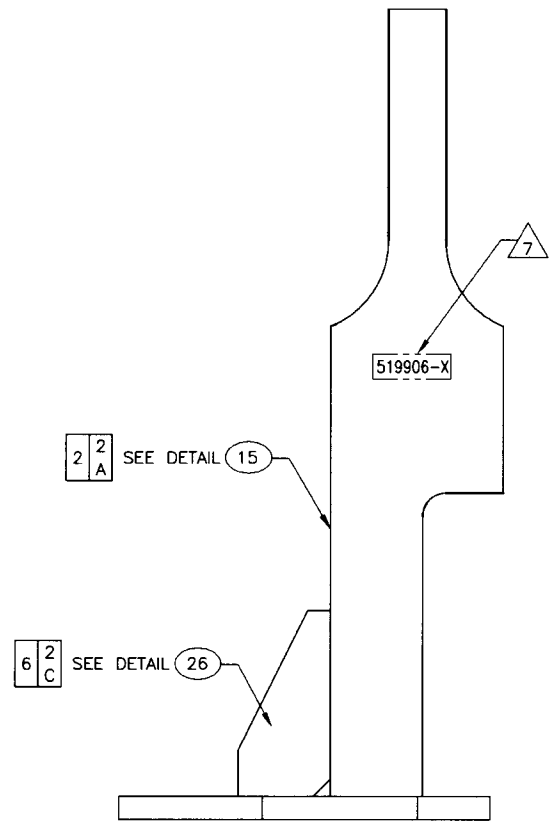


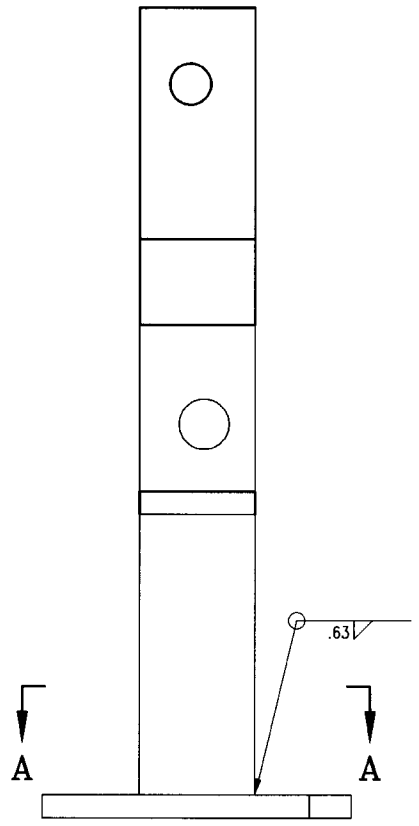


SECTION A–A
ROTATED 14.5° CCW



ISOMETRIC VIEW
SCALE: NONE

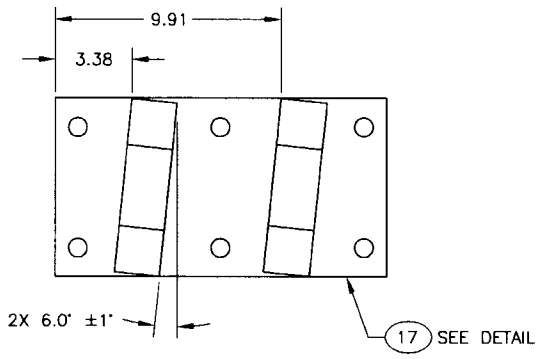


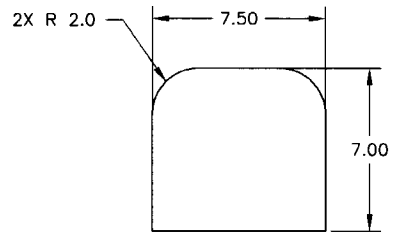


–3 ASSEMBLY SHOWN
SCALE: 1/4

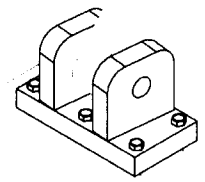
–8 ASSEMBLY OPPOSITE
SCALE: 1/4

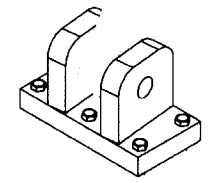
SIZE	CAGE CODE	INDEX CODE NUMBER					REV
		AREA	TYPE	CL	ORIG		
D	01MF3	098	0671	61	090	DWG-519906	1
SCALE: NOTED						SHEET 3	





16 DETAIL
SCALE: 1/4





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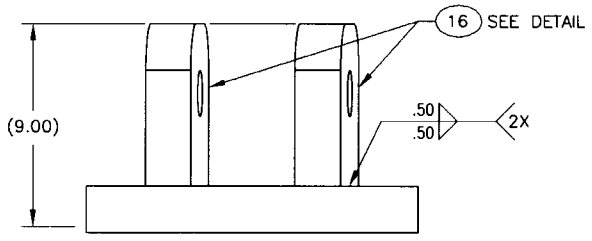

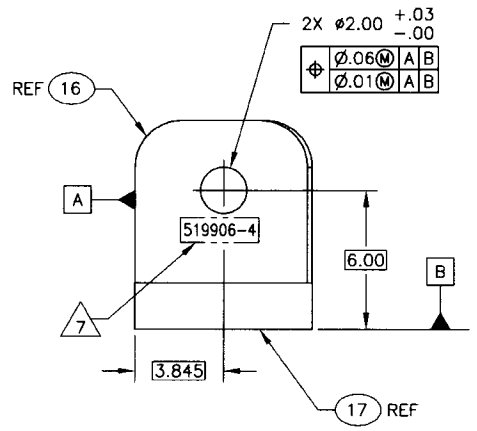

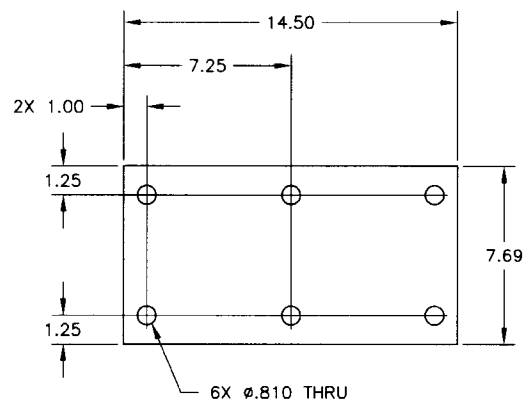

17 DETAIL
SCALE: 1/4

−4 ASSEMBLY SHOWN
SCALE: 1/4

−9 ASSEMBLY OPPOSITE
SCALE: 1/4

SIZE	CAGE CODE	INDEX CODE NUMBER				DWG-	REV
		ARSA	TYPE	CL	ORIG		
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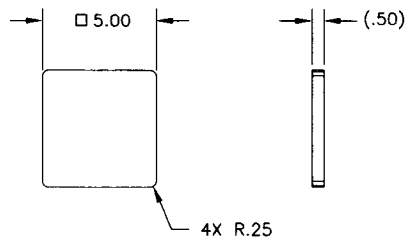
SCALE: NOTED					SHEET 4		



(18) DETAIL
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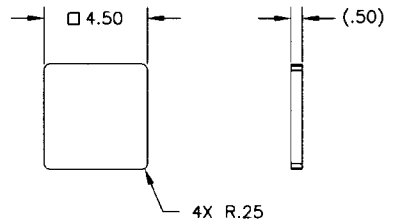

(19) DETAIL
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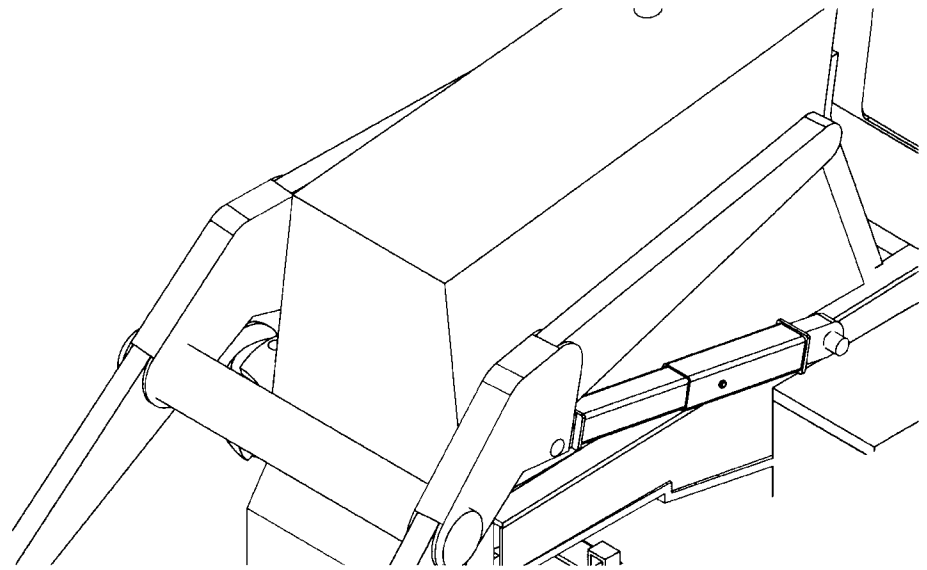

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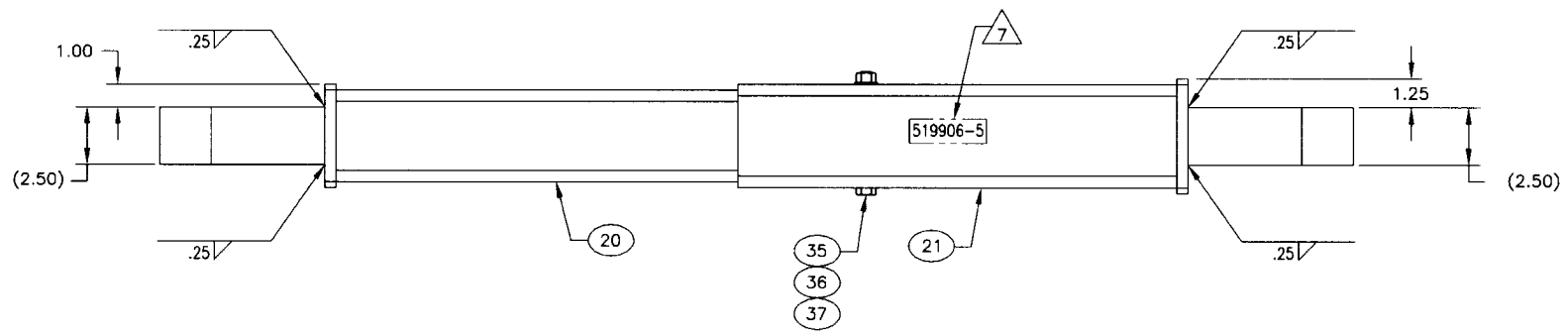

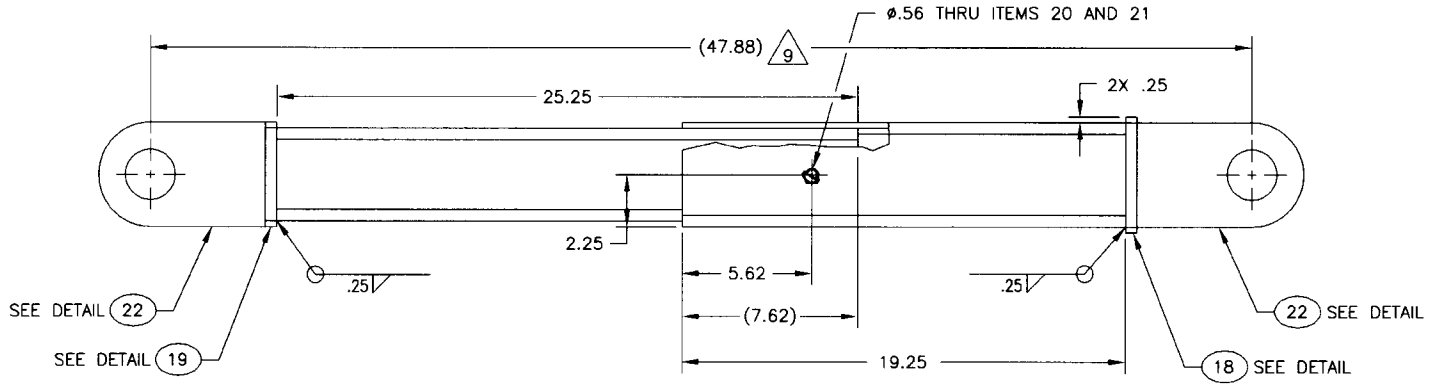

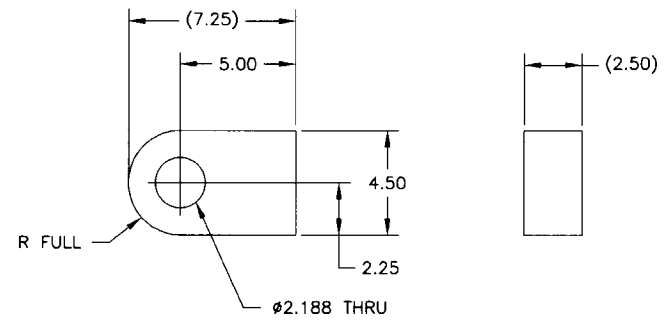

(22) DETAIL
SCALE: 1/4

-5 ASSEMBLY
SCALE: 1/4

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		AREA	TYPE	CL	ORIG		
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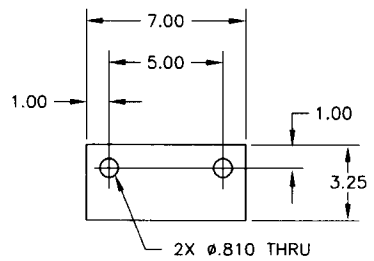
SCALE: NOTED						SHEET 5	

FMT-02-REV 3.1



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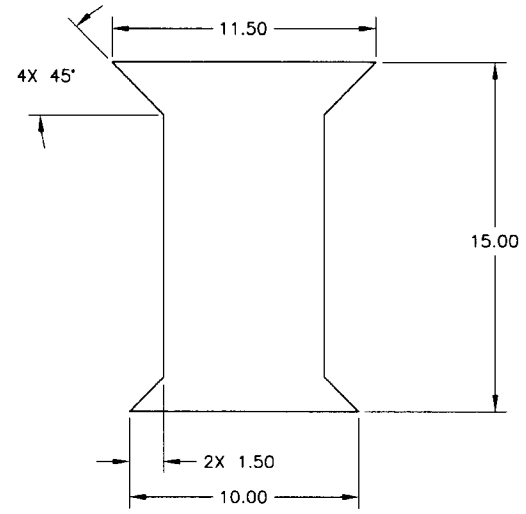

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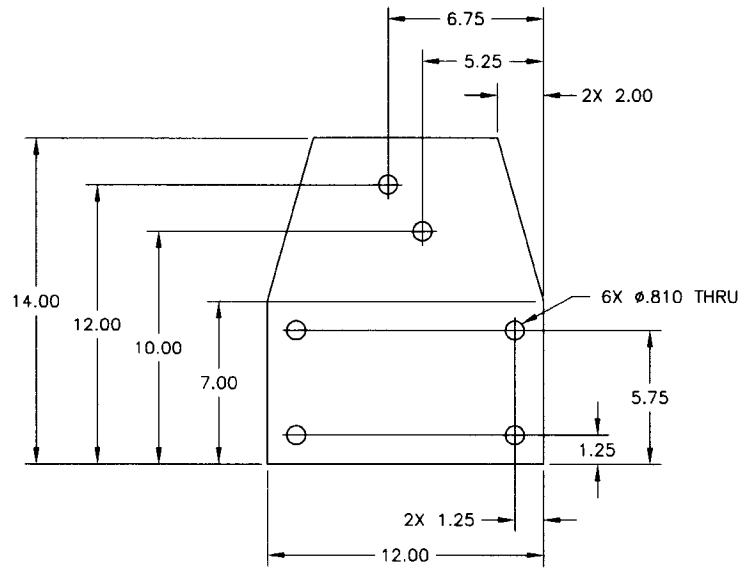
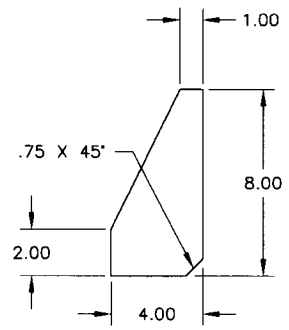
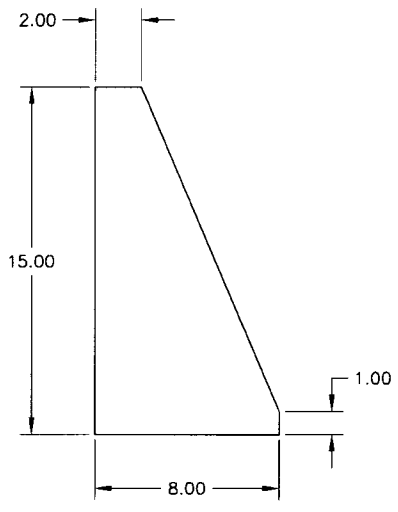


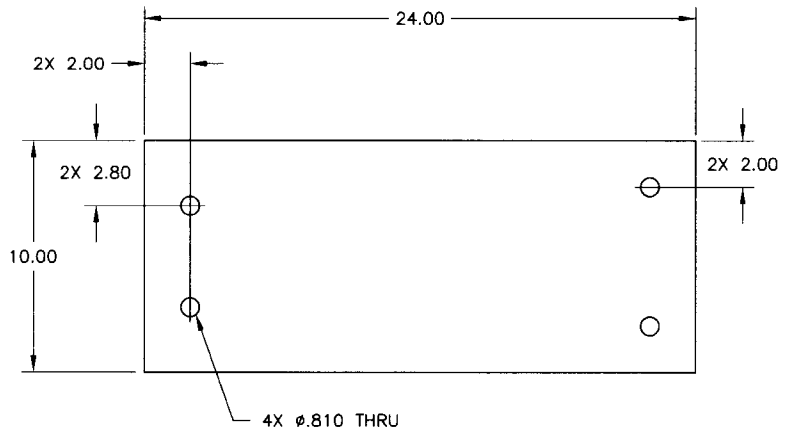
(25) DETAIL
SCALE: 1/4



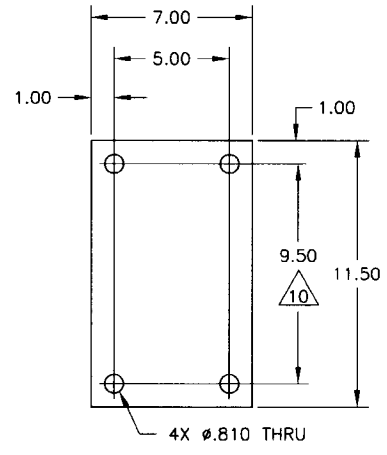
(26) DETAIL
SCALE: 1/4



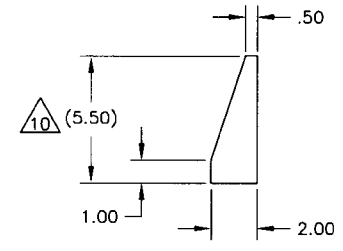
(27) DETAIL
SCALE: 1/4



(28) DETAIL
SCALE: 1/4



(29) DETAIL
SCALE: 1/4



(30) DETAIL
SCALE: 1/4

SIZE	CAGE CODE	INDEX CODE NUMBER					DWG-	REV
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SCALE: NOTED						SHEET 6		

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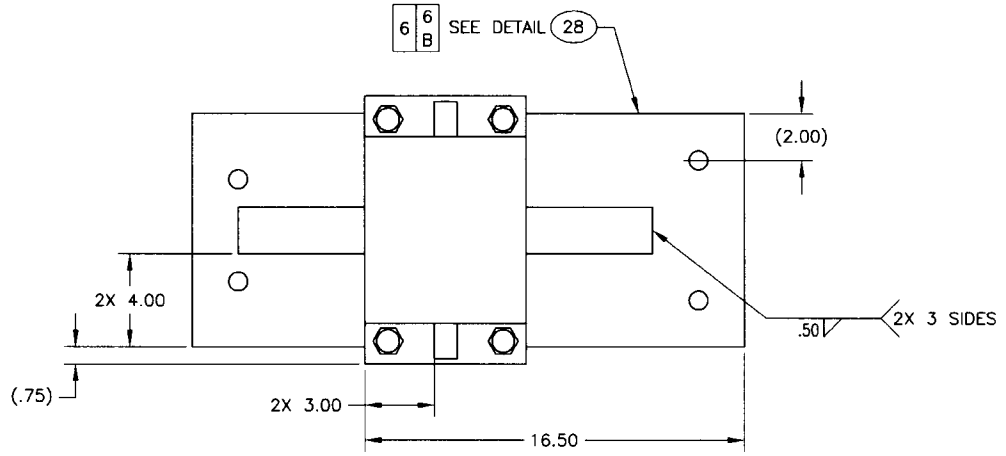
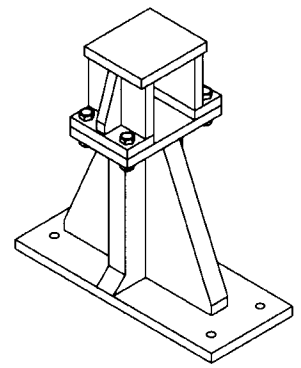
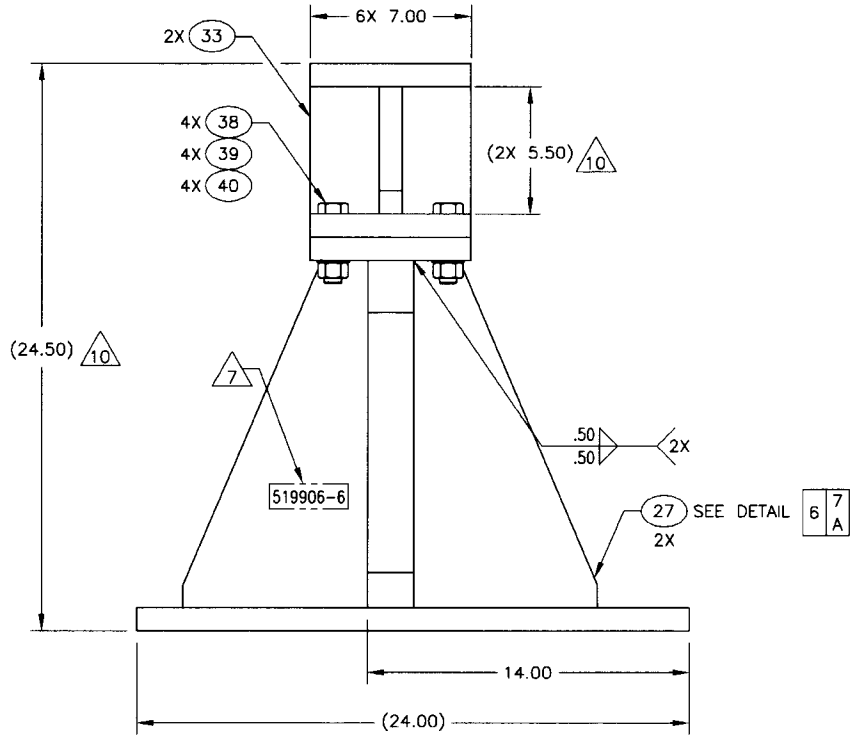
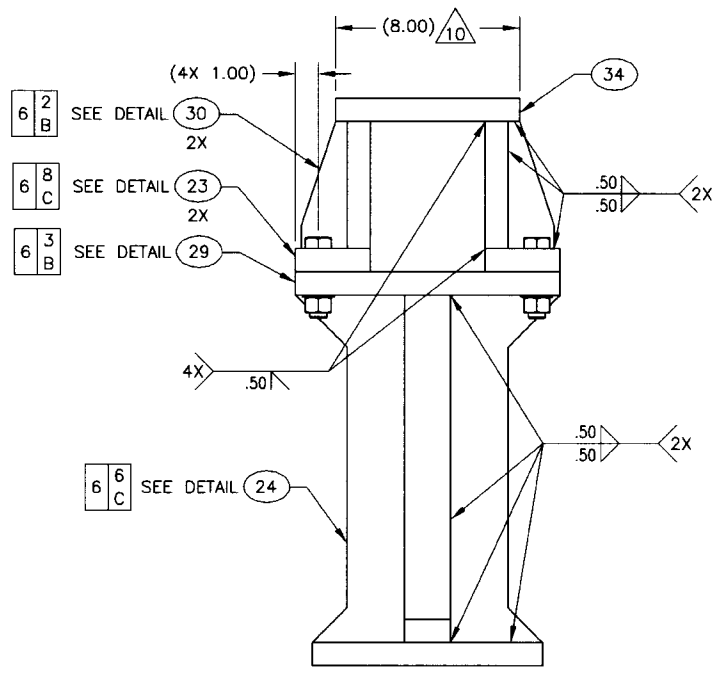
Layout Name: Sheet 6
Date: 07/22/02 - 11:21 A.M.
ID: BUB4





ISOMETRIC VIEW
SCALE: NONE





-6 ASSEMBLY
SCALE: 1/4

SIZE	CAGE CODE	INDEX CODE NUMBER					REV
		AREA	TYPE	CL	ORIG		
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SCALE: NOTED						SHEET 7	

6) DWG: 519931

FNT-21-REV 3.3

NOTES:

1. FLOW/CYCLE TIME OF THE BACKHOE VALVE GROUP TO BE CHANGED TO THE FOLLOWING BY INSTALLING ORIFICE CHOKES IN ITEM 80:
   STICK CYLINDER – 14.5 TO 15.5 GPM, 10 TO 10.5 SEC CYCLE STOP TO STOP.
   BOOM CYLINDER – 11.5 TO 12.5 GPM, 5 TO 5.5 SEC CYCLE GROUND TO SNUBBER.
   BUCKET CYLINDER – 16.25 TO 17.25 GPM, 2.5 TO 3.5 SEC CYCLE TIME STOP TO STOP BUCKET DUMP.

2. FLOW/CYCLE TIME OF THE STABILIZER VALVE GROUP TO BE CHANGED TO THE FOLLOWING:
   SWING VALVE – 8.5 TO 9.5 GPM, 7 TO 7.5 SEC CYCLE STOP TO SNUBBER.
   AUXILIARY VALVE – 14.5 TO 15 GPM.

3. INSTALL ITEM 84 TO SIDE OF CAB AS SHOWN. CONNECT PUMP TO BACKHOE FUSE BOX WITH IN LINE FUSE PER MANUFACTURERS RECOMMENDATIONS AND SPECIFICATIONS. CONNECT ITEM 86 TO 1/8 NPT COUPLING IN SEAL.

4. MOUNT ITEM 85 ON FRAME OF BACKHOE. CONNECT ITEM 86 TO 1/8 NPT COUPLING IN SEAL. CONNECT TO GREASE POINTS PROVIDING .0243 CU/MIN. USING ITEM 86.

5. MOUNT ITEM 85 AT LOCATION SHOWN. CONNECT ITEM 86 FROM ITEM 85 AT FRAME. CONNECT TO 12 DISTRIBUTION POINTS USING ITEM 86 PROVIDING .0121 CU/MIN.

6. MOUNT ITEM 87 PER MANUFACTURER RECOMMENDATIONS. CUT CABLE (SUPPLIED WITH ITEM 87) INSTALL ITEMS 106 AND 107. CONNECT TO BULKHEAD CONNECTORS IN OUTER SEAL.

7. MATCH DRILL FOR ITEM 101 AND FILTER ASSY MOUNTING BRACKETS.

8. PROVIDE BACKHOE WITH MODIFICATIONS BACK TO CONTRACTOR WITH ALL SERVICE MAINTENANCE PERFORMED AND A FULL TANK OF FUEL.

9. FIELD VERIFY DIMENSIONS FOR FIT PRIOR TO FABRICATION.

10. FOR WIRING DIAGRAM OF ITEM 87 SEE DRAWING 522053.

11. MOUNT EXCAVATOR BUCKET POSITION MONITOR READOUT ABOVE THE RIGHT HAND FOOT PEDAL ALONG SIDE THE BACKHOE CONTROL PANEL AND BELOW THE WINDOW.

	11	10	9	8	7	6	5	4	3	2	1	SHEET
REV STATUS OF SHEETS	1	1	1	1	1	1	1	1	1	1	1	REV

REVISIONS		
REV	DESCRIPTION	EFFECTIVE DATE:
1	SEE DAR 93628	7-19-2002

	QTY REQD	SAFETY CAT.	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	MATERIAL/SPECIFICATION OR VENDOR NAME	ITEM NO.
	3	CG	8C7312	-10 ORFS TO -10 JIC SWIVEL	CATERPILLAR	75
	2	CG	6V9012	-8 JIC TO -10 JIC	CATERPILLAR	74
	2	CG	8C7311	-8 ORFS TO -8 JIC FITTING	CATERPILLAR	73
	1	CG	QPQSV34-SAE-3/4-M-H	MALE COUPLER	HOLMBURY	72
	1	CG	QPQSV34-SAE-3/4-F-H	FEMALE COUPLER	HOLMBURY	71
	4	CG	0308190	-10 JIC TO -12 STOR	CATERPILLAR	70
	2	CG	1P7625	90° ELBOW, -8 STOR TO 37° -10 JIC	CATERPILLAR	69
	4	CG	2P7636	-8 STOR TO -10 37° JIC	CATERPILLAR	68
	1	CG	10-6 CTX	90° ELBOW, 3/8 NPT TO -8 JIC	PARKER	67
	3	CG	0618248	MALE TO MALE JIC CONNECTOR	CATERPILLAR	66
	28	CG	950B	5/8 TFE HYDRAULIC HOSE 4000 PSIG WORKING PRESSURE	PARKER	65
						64
	2	CG	6V9510	-11 PLUG	CATERPILLAR	63
	2	CG	6V9831	-10 CAP	CATERPILLAR	62
	4	CG	8T0404	90° ELBOW, -12 STOR TO -10 ORFS MALE	CATERPILLAR	61

PARTS LIST

CONTINUED 2 2 A

	QTY REQD	SAFETY CAT.	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	MATERIAL/SPECIFICATION OR VENDOR NAME	ITEM NO.
	2	CG	7X3387	1/4 NPT SAMPLING VALVE	CATERPILLAR	59
	2	CG	5P4675	1/2 TO 1/4 NPT FITTING	CATERPILLAR	58
	2	CG	5P4674	3/4 TO 1/2 STOR FITTING	CATERPILLAR	57
	2	CG	3E7423	-8 MALE TO -8 ORING BOSS	CATERPILLAR	56
	2	CG	6V8942	-12 FEMALE SWIVEL TO -8 MALE ORFS	CATERPILLAR	55
	2	CG	6V8947	-20 FEMALE SWIVEL TO -12 MALE ORFS	CATERPILLAR	54
	2	CG	7X2429	TEE WITH FEMALE SWIVEL ORFS	CATERPILLAR	53
	2	CG	6V9855	90° FEMALE SWIVEL TO MALE ORFS	CATERPILLAR	52
	1	CG	1242125	STRAIGHT HYDRAULIC HOSE END FEMALE SWIVEL	CATERPILLAR	51
	1	CG	20L0EQ1	90° FLANGE ELBOW 1.25 ORFS	PARKER	50
	1	CG	8C6868	-6 ORFS TO .25 NPT MALE FITTING	CATERPILLAR	49
	1	CG	6V9961	STRAIGHT HYDRAULIC HOSE END FEMALE SWIVEL	CATERPILLAR	48
	1	CG	9V9200	90° .4375 STOR (STRAIGHT-THREAD O-RING) TO -6 ORFS	CATERPILLAR	47
						46
	1	CG	6V8734	MALE TO MALE CONNECTOR ORFS	CATERPILLAR	45
	1	CG	6V9831	ORFS CAP	CATERPILLAR	44
	2	CG	6V9838	TEE WITH FEMALE SWIVEL ORFS	CATERPILLAR	43
	2	CG	8T1711	45° HYDRAULIC HOSE END FEMALE SWIVEL	CATERPILLAR	42
	4	CG	6V9852	90° FEMALE SWIVEL TO MALE ORFS	CATERPILLAR	41
	4	CG	7Y3730	STRAIGHT FLANGE MALE ORFS	CATERPILLAR	40
	13	CG	8C7312	-10 MALE ORFS TO -10 37 ° JIC	CATERPILLAR	39
	13	CG	8T1710	STRAIGHT HYDRAULIC HOSE END FEMALE SWIVEL	CATERPILLAR	38
	11	CG	8T1713	90° HYDRAULIC HOSE END FEMALE SWIVEL	CATERPILLAR	37
	6	CG	16-10 TRLON	-10 MALE TO -16 FEMALE SWIVEL ORFS	PARKER	36
	3	CG	16L0EQ1	90° FLANGE ELBOW, 1.0 ORFS	PARKER	35
						34
	1	CG	50925K381	HIGH PRESSURE HEX SOCKET PLUG, 1/4 NPT	MCMASTER-CARR ASTM A108	33
	1	CG	16SPGG5QRB	FLANGE SPACER WITH GAGE PORTS	PARKER	32
	4	CG	8T9377	SPLIT FLANGE BOLT 3/8-14 x 2.25	CATERPILLAR	31

PARTS LIST

	QTY REQD	SAFETY CAT.	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	MATERIAL/SPECIFICATION OR VENDOR NAME	ITEM NO.
	4	CG	8T4896	SPLIT FLANGE WASHER	CATERPILLAR	29
	14	CG	1P4577	SPLIT FLANGE, 1.0	CATERPILLAR	28
	AR	CG	716	HYDRAULIC HOSE ONE WIRE, .375 ID	CATERPILLAR	27
	AR	CG	716	HYDRAULIC HOSE ONE WIRE, 1.25 ID	CATERPILLAR	26
	AR	CG	XT-3ES	HYDRAULIC HOSE, 4000 PSI WP 1.0 ID	CATERPILLAR	25
	AR	CG	XT-3ES	HYDRAULIC HOSE, 4000 PSI WP .625 ID	CATERPILLAR	24
	AR	CG	XT-3ES	HYDRAULIC HOSE, 4000 PSI WP .375 ID	CATERPILLAR	23
						22
	13	SS	6V9170	BULKHEAD FITTING NUT 1.0x14	CATERPILLAR	21
	13	SS	92141A038	WASHER 1.0625 ID x 2.0 OD 18-8 SST	MCMASTER-CARR	20
						19
	2	SS	6V8996	STRAIGHT BULKHEAD FITTING ORFS	CATERPILLAR	18
	11	SS	6V8989	45° BULKHEAD FITTING ORFS	CATERPILLAR	17
						16
	13	SS	-15	BULKHEAD FITTING GASKET	MAKE FROM HIGH GRADE VITON .0625 THK DUR SHORE 75A ASTM D-2000-86E TYPE HK	15
						14
	2	CG	-13	MOUNTING BRACKET	PLATE, 1/4 THK CS ASTM A36	13
	1	CG	-12	MOUNTING PLATE	PLATE, 1/4 THK CS ASTM A36	12
						11
						10
						9
						8
						7
						6
	2		519906-5	FRONT ADJUSTMENT ASSEMBLY		5
						4
						3
						2
		CG	-1	INSTALLATION		1

PARTS LIST

XREF DRAWINGS
519858
519859
519868
519902

PROFESSIONAL ENGINEER REGISTERED 9405 7-19-2002 STATE OF IDAHO BLAIR K. GROVER

DASH NO.	NEXT ASSY
-1	519933

APPLICATION

DIMENSIONING AND SYMBOLOGY ARE AMERICAN NATIONAL STANDARD UNLESS OTHERWISE SPECIFIED
SURFACE ROUGHNESS 125/
DIMENSIONS AND TOLERANCES ARE IN INCHES
TOLERANCES: X = ± 1, DECIMALS: XX = ± .03, XXX = ± .010
FRACTIONS ± 1/8
ANGULAR ± 2°
DO NOT SCALE DRAWING

SUBCONTRACT NO.
REQUESTER: S.A. DAVIES
DESIGN: B. GROVER
DRAWN: chris Keller / BUBBA
PROJECT NO. 021052
SPEC CODE
FOR REVIEW/APPROVAL SIGNATURES SEE DAR NO. 93345
EFFECTIVE DATE: 07/11/2002

INEEL — Idaho National Engineering & Environmental Laboratory, BECHTEL BWXT IDAHO, LLC

OU 7-10
GLOVEBOX EXCAVATOR METHOD PROJECT
EXCAVATOR MODIFICATIONS
WSE (WESTERN STATES EQUIPMENT) MODIFICATIONS

SIZE	CAGE CODE	INDEX CODE NUMBER AREA	TYPE	GL	DRIG	DWG-	REV
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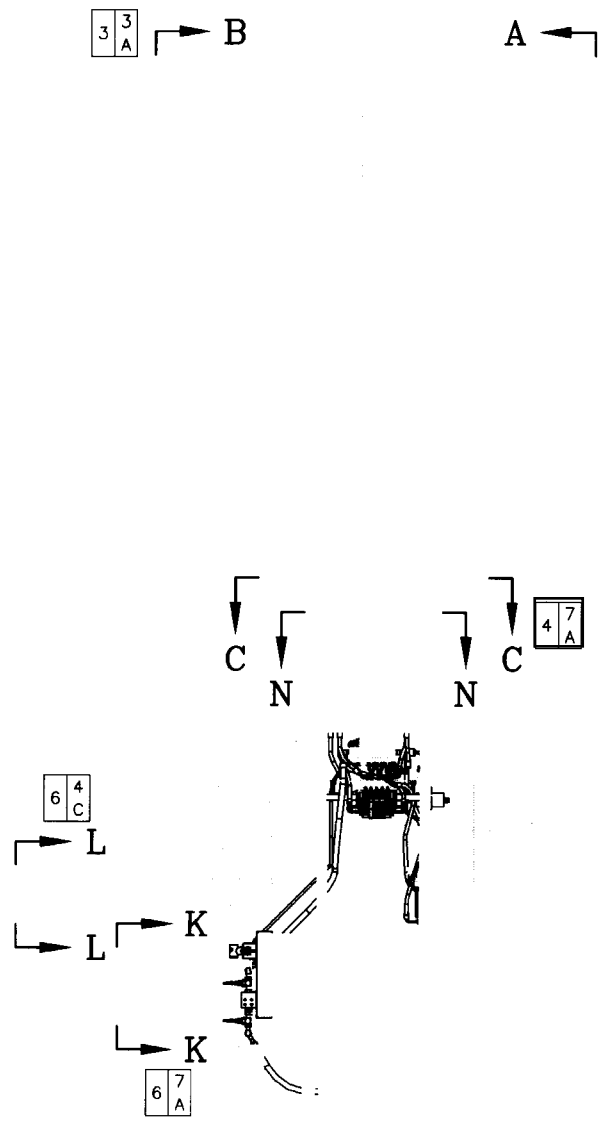
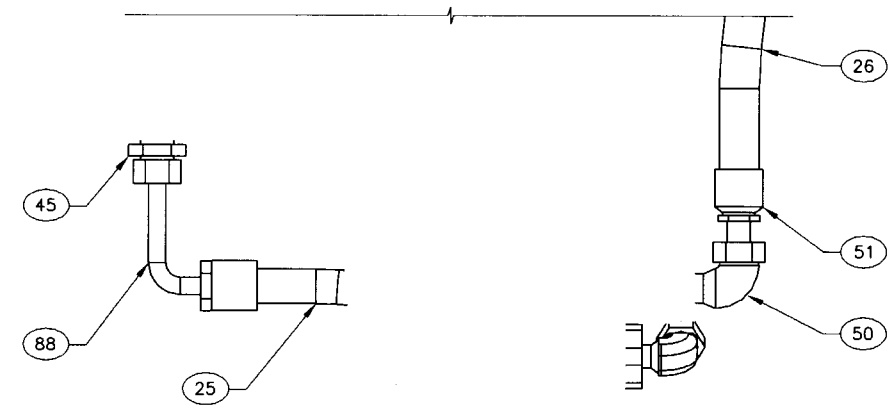
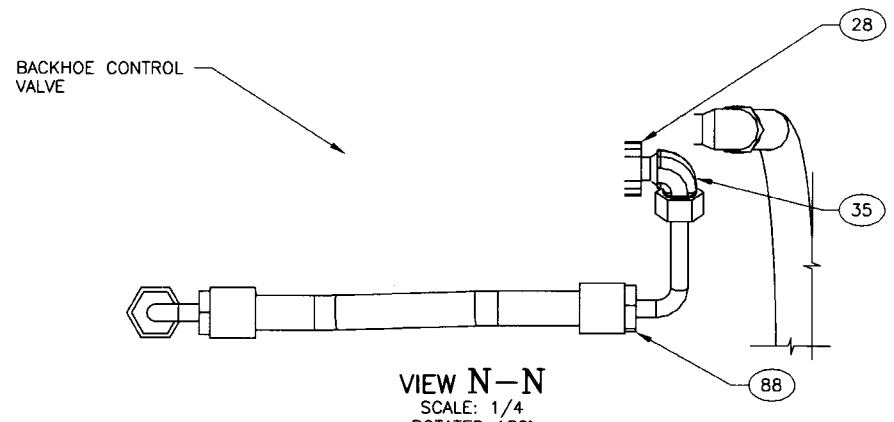


-1 INSTALLATION

(PLAN VIEW)
SCALE: 1/30
CAB REMOVED FOR CLARITY





VIEW N-N

SCALE: 1/4
ROTATED 180°
BACKHOE CONTROL VALVE, HYDR SUPPLY AND RETURN ONLY SHOWN FOR CLARITY

QTY REQD	-1	SAFETY CAT.	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	MATERIAL/SPECIFICATION OR VENDOR NAME	ITEM NO.
	2	CG	CM B 8151-0	FIELD WIREABLE CONNECTOR FEMALE	TRUCK	107
	2	CG	CM BS 8151-0	FIELD WIREABLE CONNECTOR MALE		106
	1	CG	40311	PIN VALVE	PART OF WOODS WAIN ROY ASSY	105
						104
						103
						102
	1	CG	EJA430ADBS3B92EA	PRESSURE TRANSMITTER	YOKOGAWA	101
						100
						99
						98
	1	CG	6V9963	90° HYDRAULIC HOSE END FEMALE SWIVEL	CATERPILLAR	97
	2	CG	1242143	90° HYDRAULIC HOSE END FEMALE SWIVEL		96
	1	CG	6V8627	90° ELBOW -4 ORFS TO -6 STOR		95
	1	CG	6V9835	TEE, -4 MALE, MALE FEMALE SWIVEL		94
	3	CG	1242157	90° HYDRAULIC HOSE END FEMALE SWIVEL		93
						92
						91
	2	CG	8C6758	-10 ORFS TO -6 STOR BOSS	CATERPILLAR	90
	2	CG	8T1712	90° HYDRAULIC HOSE END FEMALE SWIVEL		89
	2	CG	6V9976	-16 90° HYDRAULIC HOSE END FEMALE SWIVEL		88
10	1	CG	0C107	EXCAVATOR BUCKET POSITION MONITOR	OCALA INSTRUMENTS	87
	AR	CG	700901	NYLON TUBE, 10,000 PSIG 1/8 ID X 5/16 OD	LINCOLN INDUSTRIAL	86
	2	CG	619266482	SSV DIVIDER VALVE, 12 PORT		85
	1	CG	94812	ELECTRIC GREASE PUMP, 1616 CAPACITY, 12V-3.5A, 3600 PSIG		84
	AR	CG	1602245	NYLON ABRASION SLEEVE, 1 1/4"	CATERPILLAR	83
	1	CG	0050658	-12 STOR TO -10 JIC		82
	12	CG	2P7636	-8 STOR TO -10 JIC		81
	3	CG	8J5458	LOCK CHECK VALVE		80
	2	CG	0307964	-10 JIC TO -10 JIC 45° ELBOW		79
	7	CG	5P1945	-12 JIC TO -12 JIC		78
	7	CG	8C7313	-12 ORFS TO -12 JIC		77
	1	CG	8K6686	-10 STOR TO -10 JIC 90° ELBOW		76

PARTS LIST

SIZE	CAGE CODE	INDEX CODE NUMBER				DWG-	REV
		AREA	TYPE	CL	ORIG		
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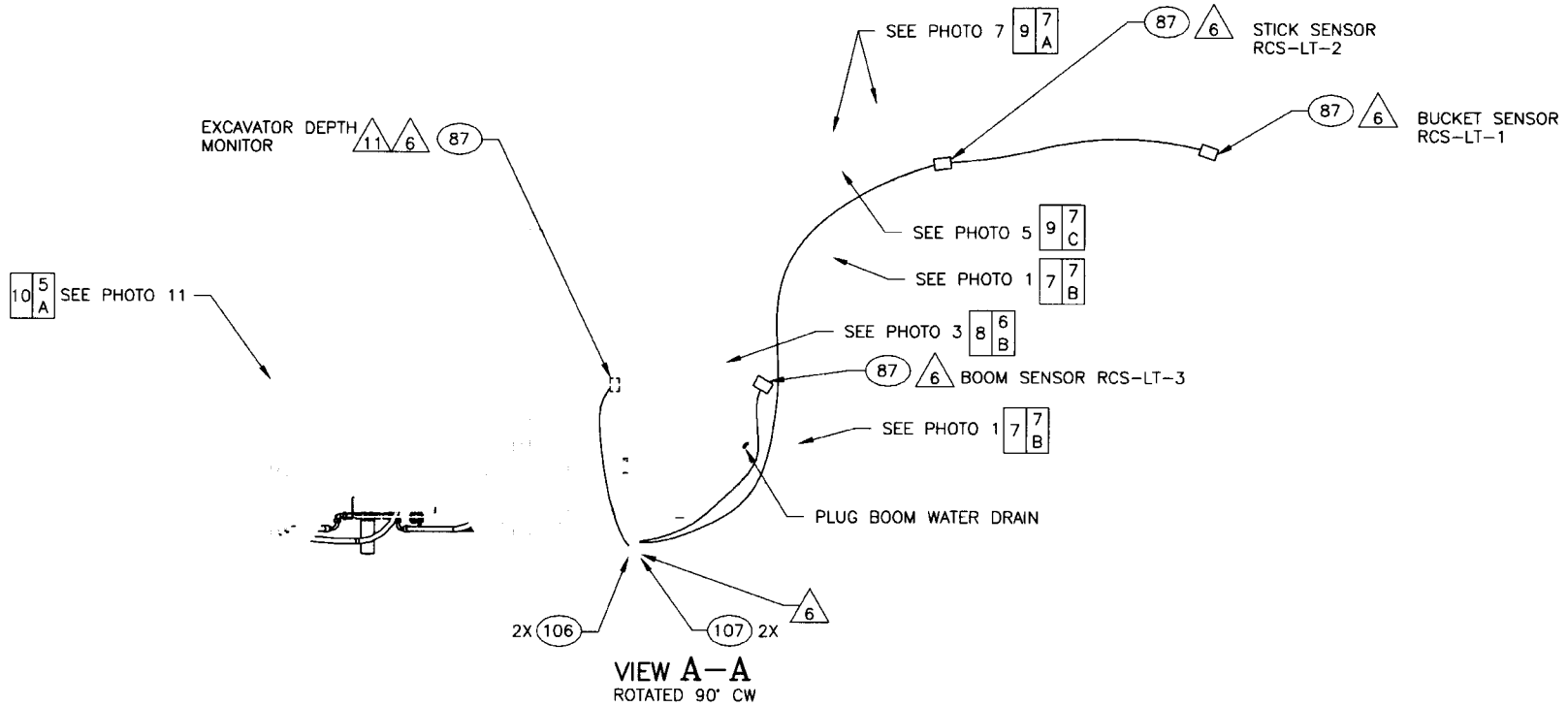
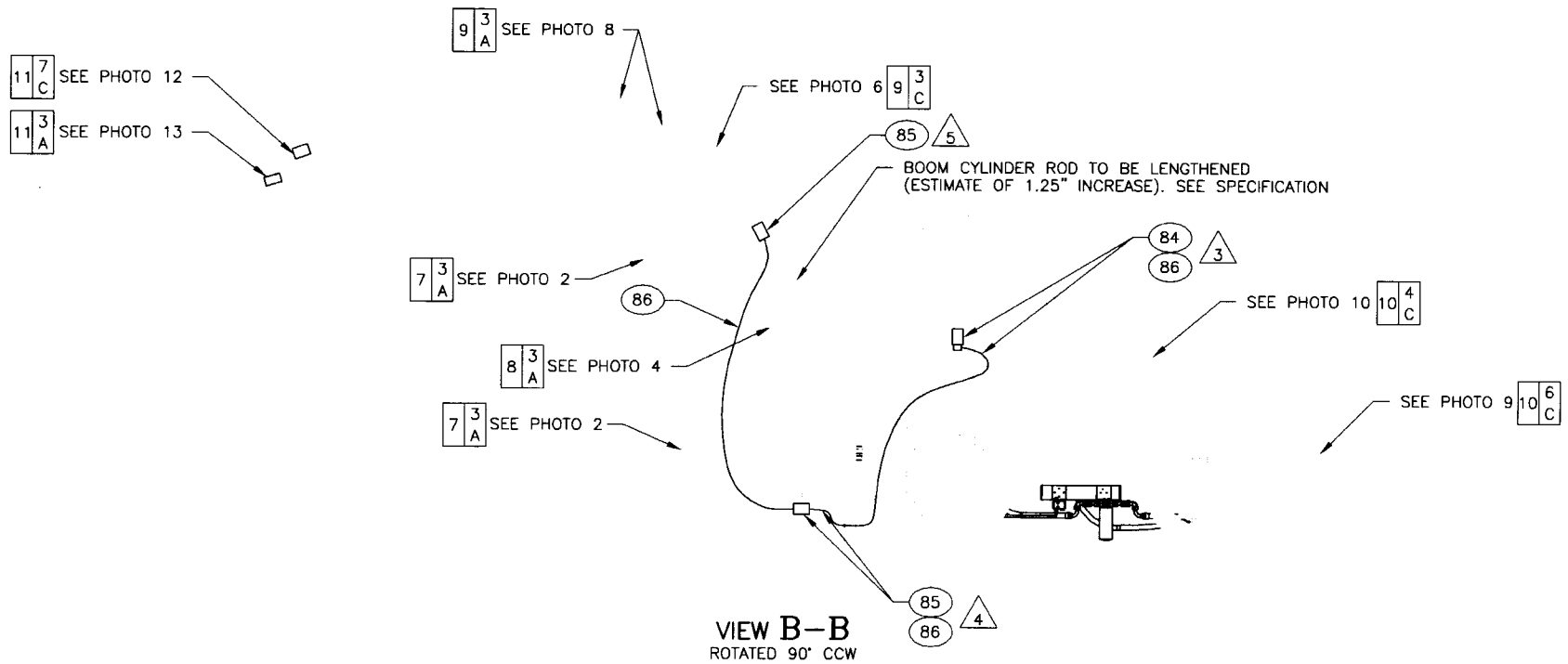
SCALE: NOTED						SHEET 2	

File: 519931.dwg
Path: Q:\Keller
Layout Name: Sheet 02
Date: 07/19/02 - 1:39 P.M.
ID: KJ1



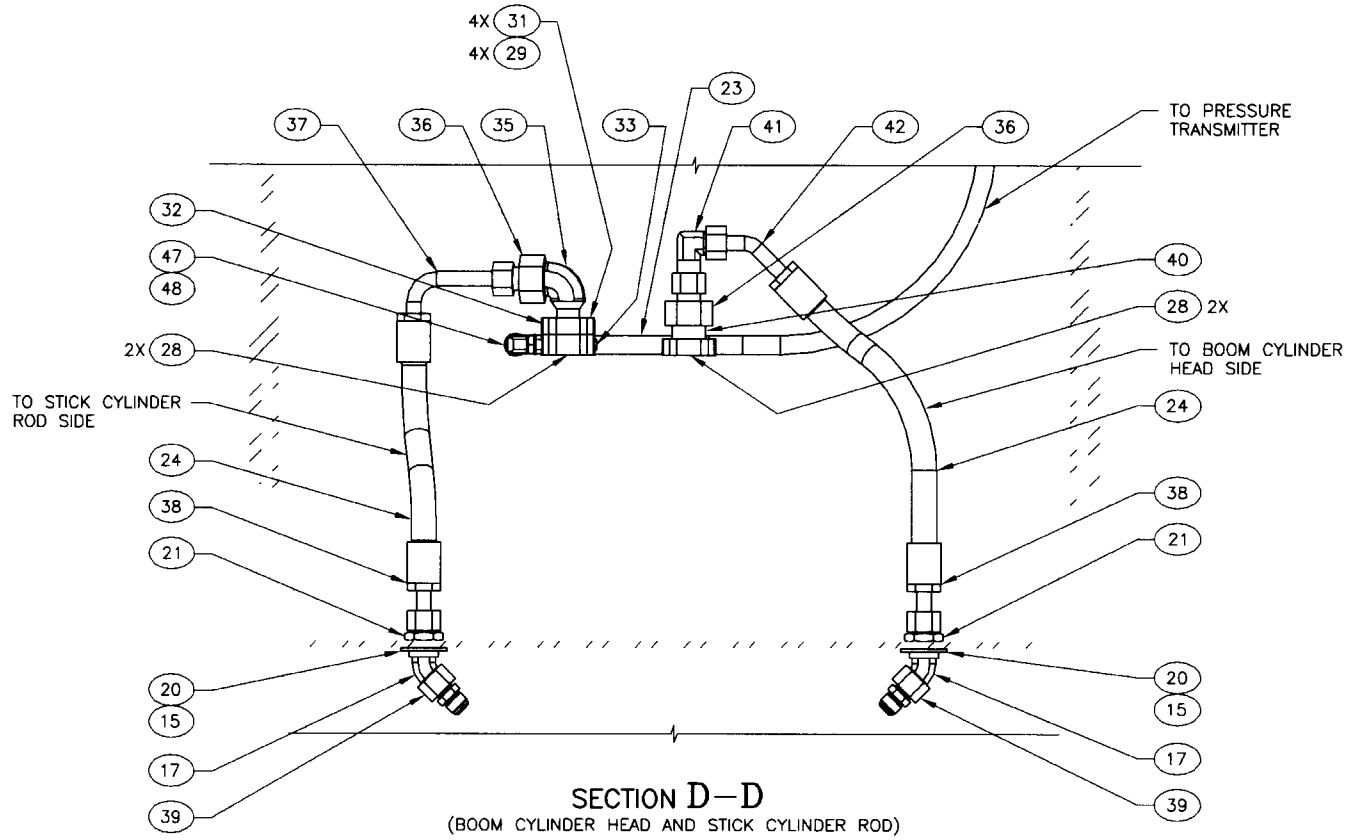
VIEW A–A
ROTATED 90° CW



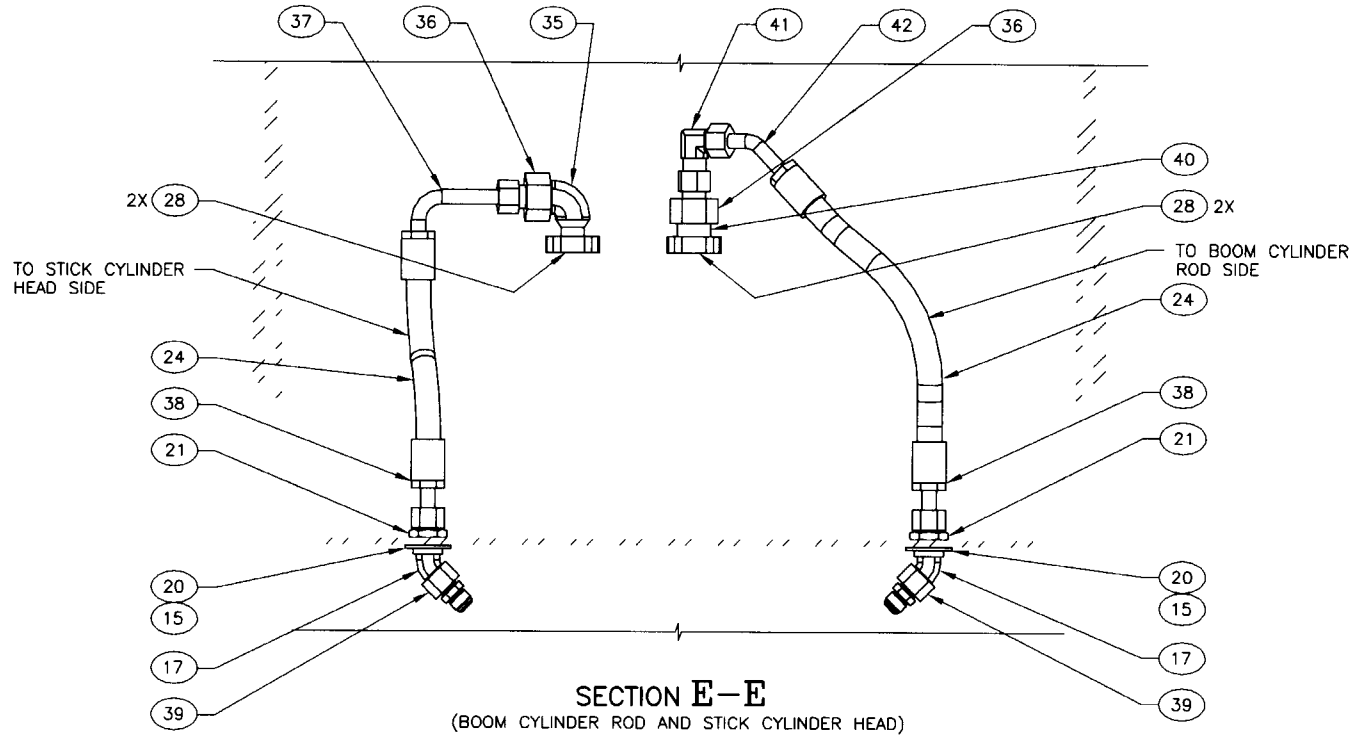
VIEW B–B
ROTATED 90° CCW

SIZE	CAGE CODE	INDEX CODE NUMBER				DWG-519931	REV
		AREA	TYPE	CL	ORIG		
D	01MF3	098	0671	41	090		1
SCALE: 1/30						SHEET 3	

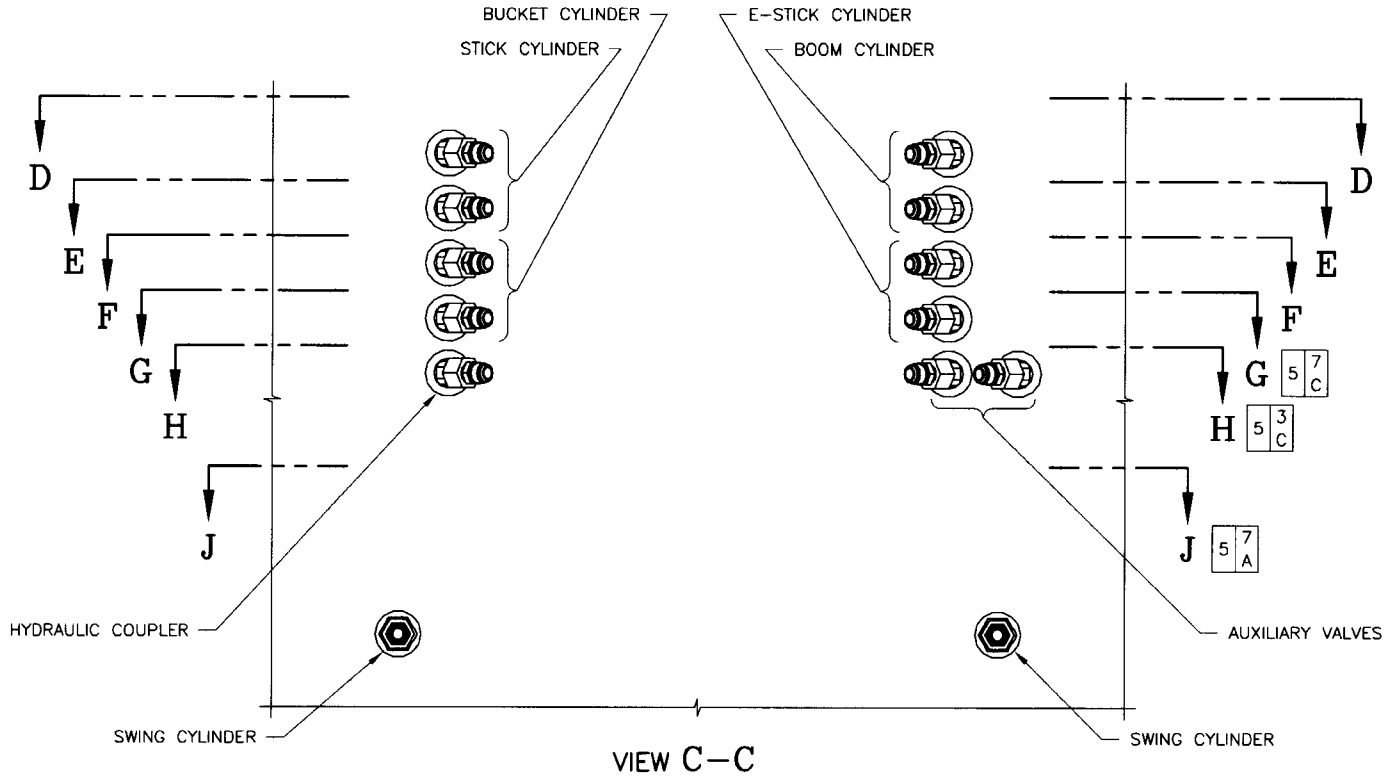
File: 519931.dwg
Path: O:\Keller
Layout Name: Sheet 03
Date: 07/19/02 - 1:38 P.M.
ID: KJ1



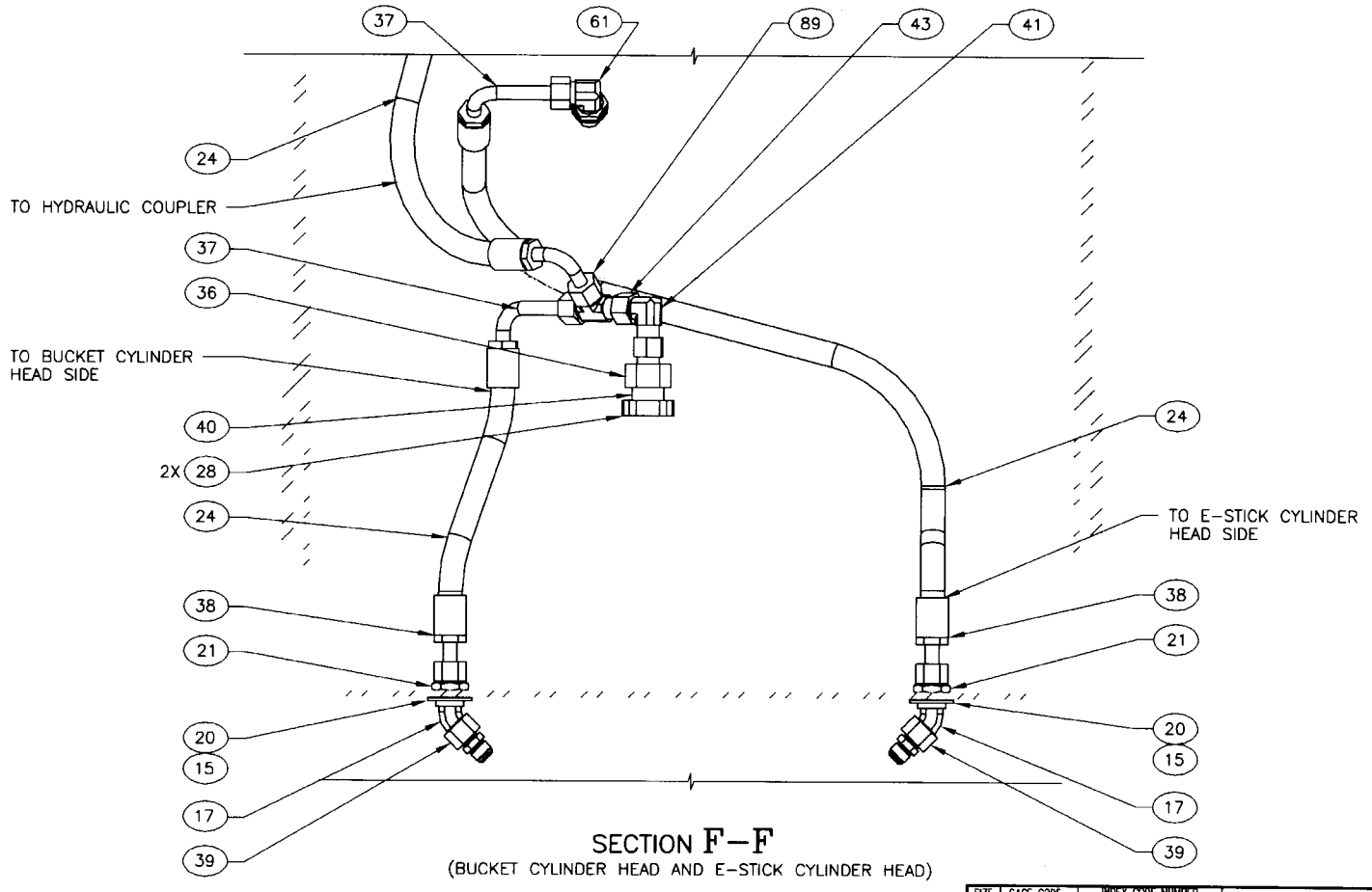
SECTION D–D
(BOOM CYLINDER HEAD AND STICK CYLINDER ROD)



SECTION E–E
(BOOM CYLINDER ROD AND STICK CYLINDER HEAD)



VIEW C–C
ROTATED 180°
MAIN FRAME ONLY
SHOWN FOR CLARITY



SECTION F–F
(BUCKET CYLINDER HEAD AND E-STICK CYLINDER HEAD)

SIZE	CAGE CODE	INDEX CODE NUMBER					REV
		AREA	TYPE	CL	ORIG		
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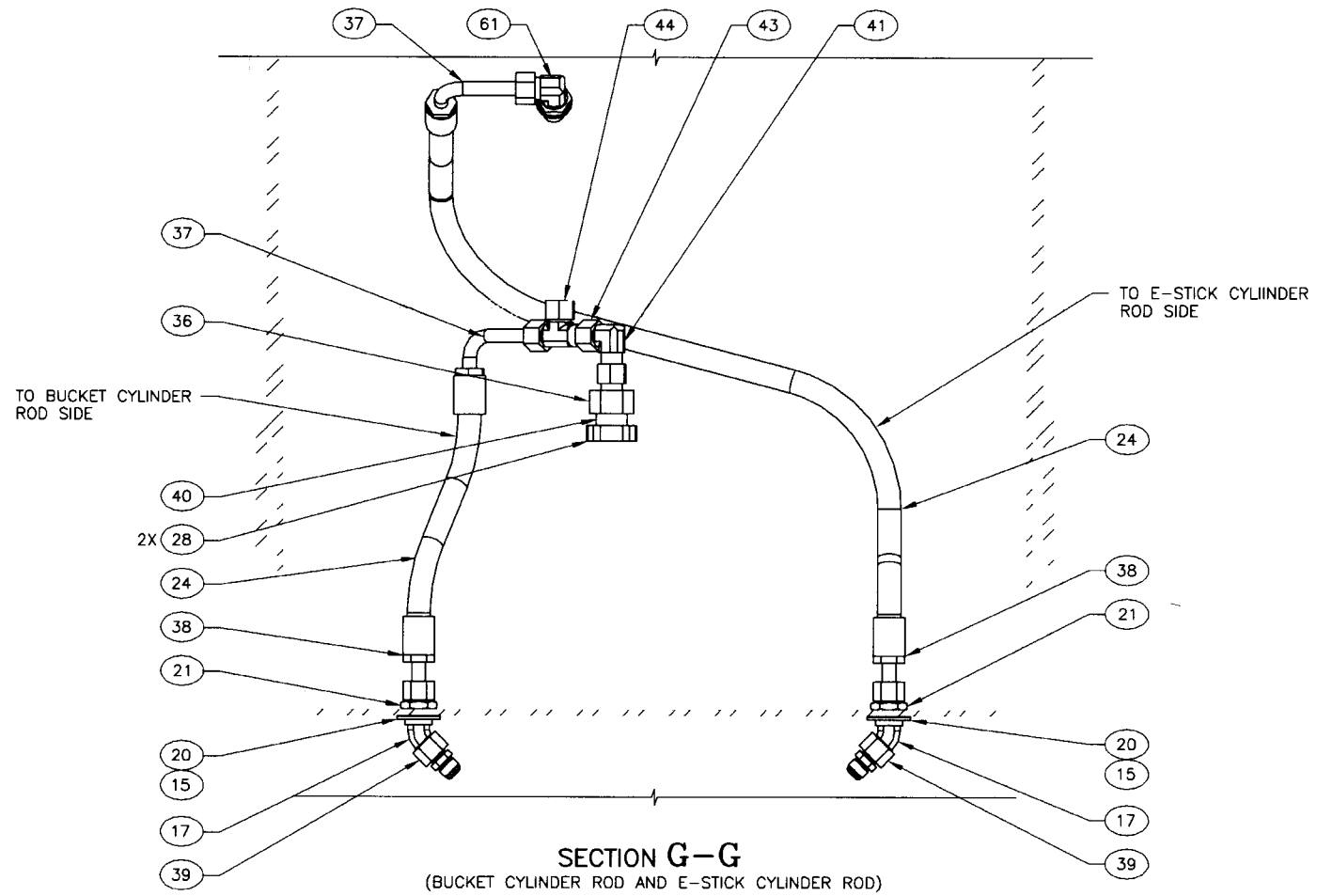
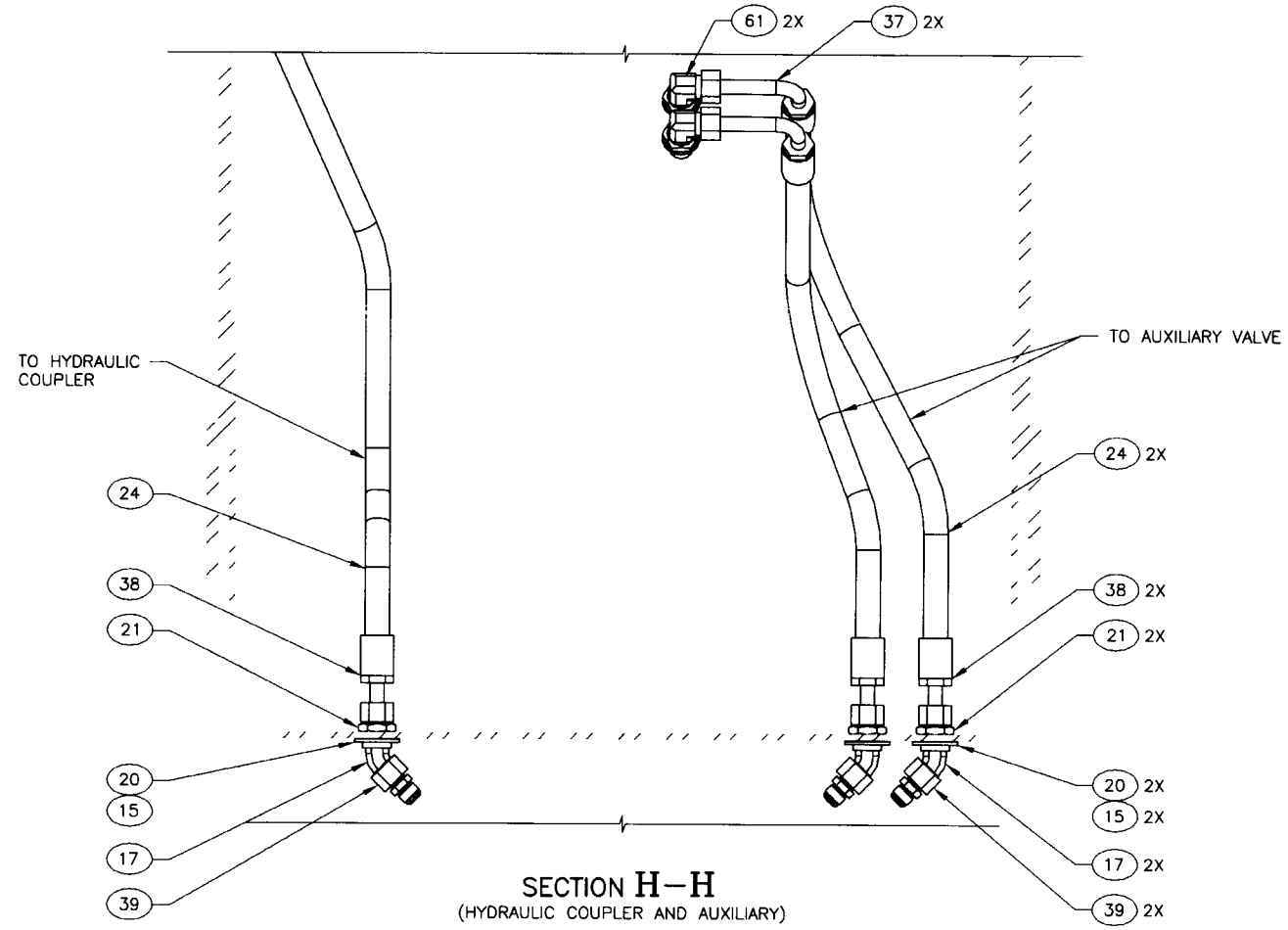
SCALE: 1/4						SHEET 4	

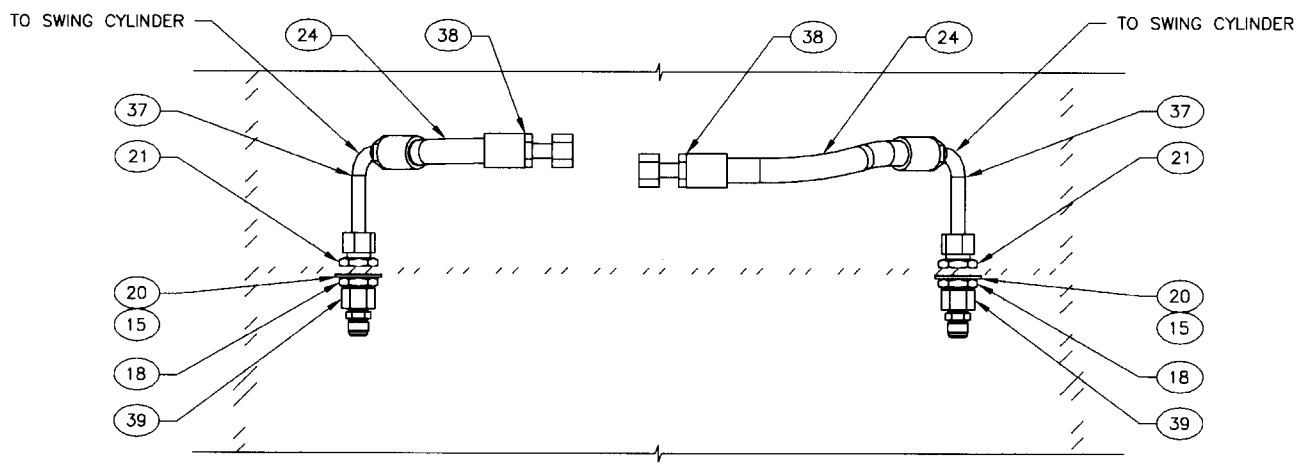
File: 519931.dwg
Path: Q:\Keller
Layout Name: Sheet 04
Date: 07/19/02 – 2:10 P.M.
ID: KJ1



SECTION G–G
(BUCKET CYLINDER ROD AND E-STICK CYLINDER ROD)



SECTION H–H
(HYDRAULIC COUPLER AND AUXILIARY)



SECTION J–J
(SWING CYLINDER)

SIZE	CAGE CODE	INDEX CODE NUMBER				DWG-	REV
		AREA	TYPE	CL	ORIG		
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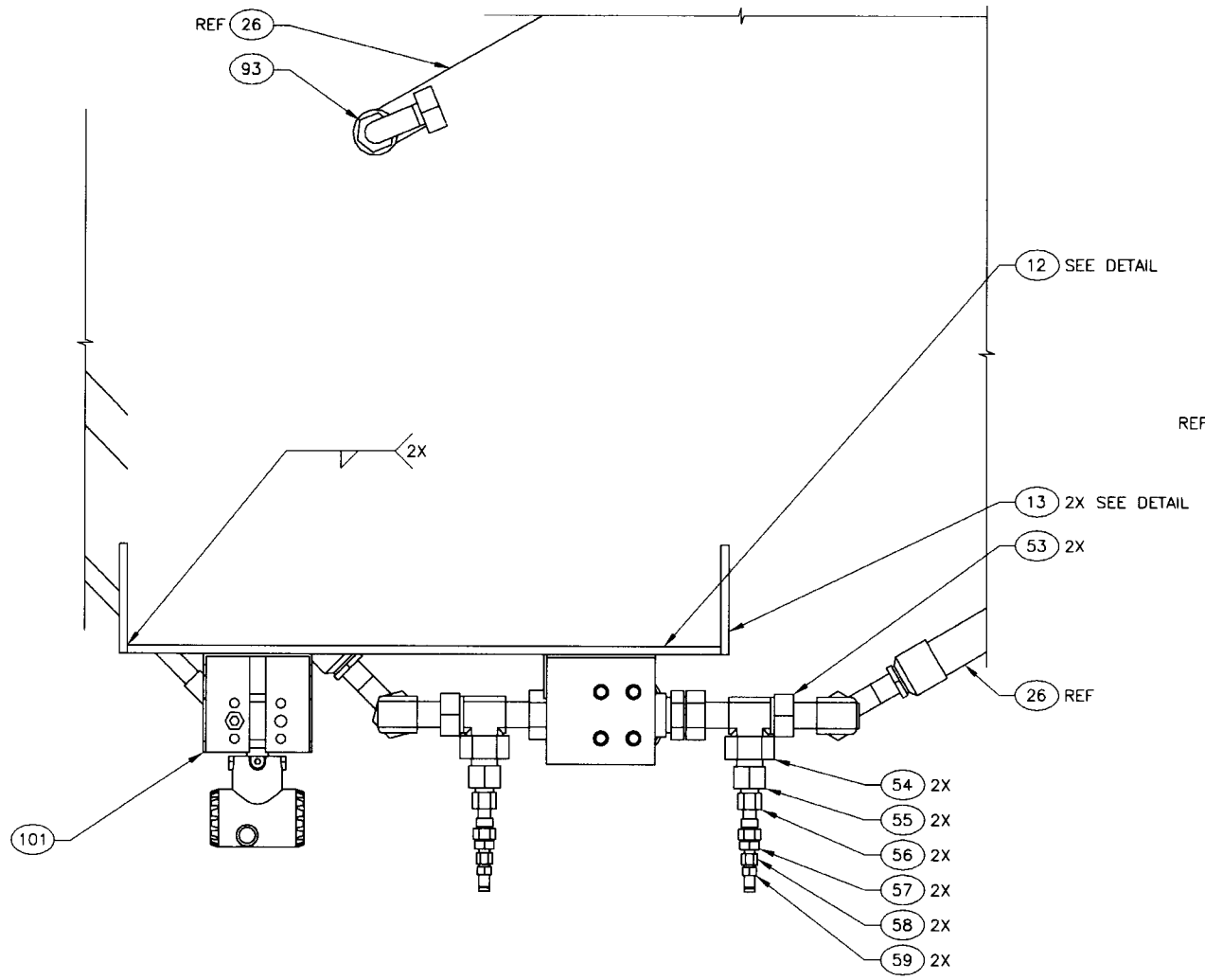
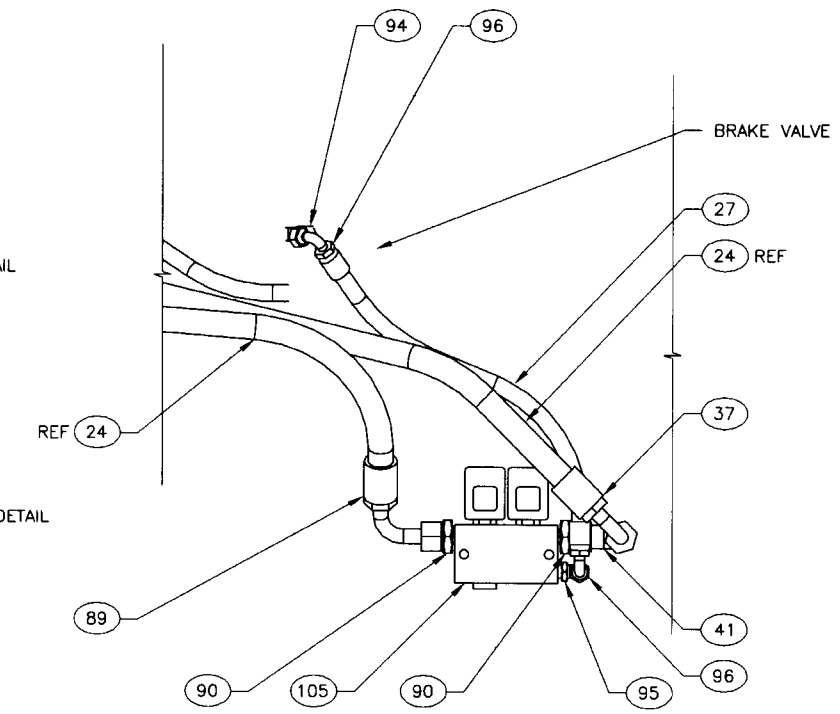
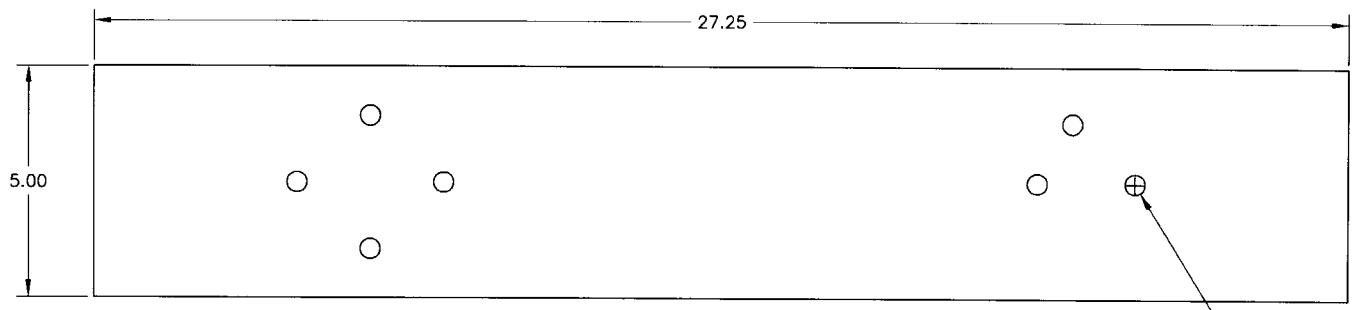
SCALE: 1/4						SHEET 5	

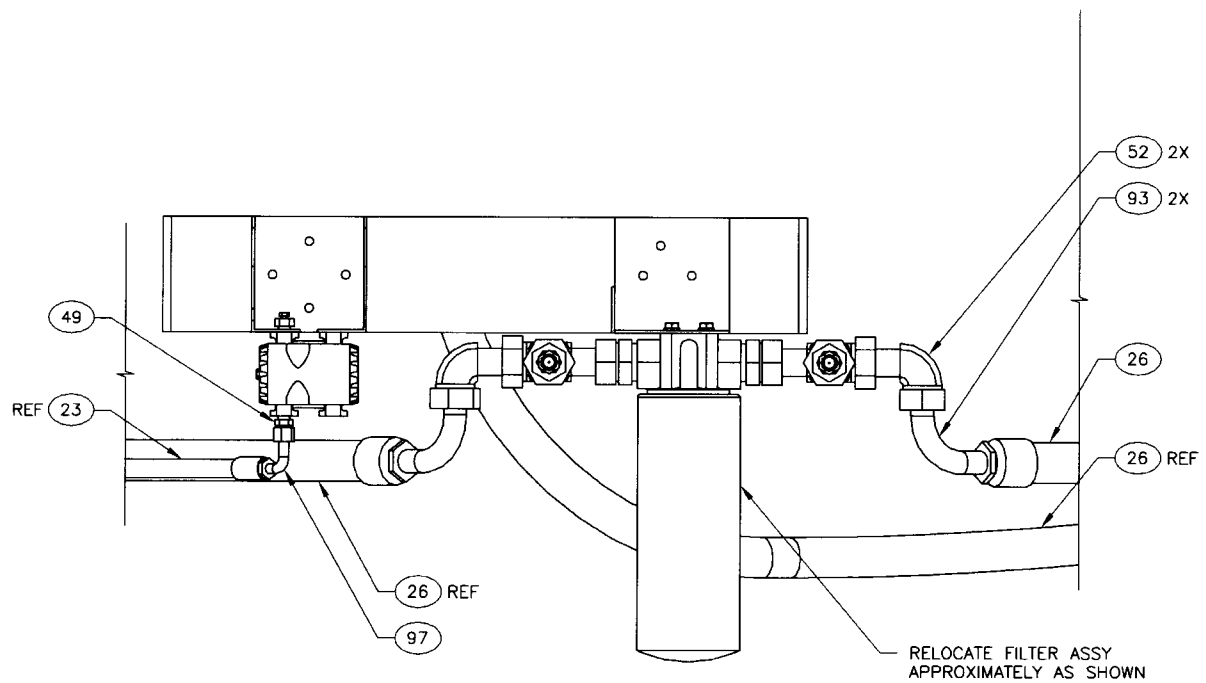




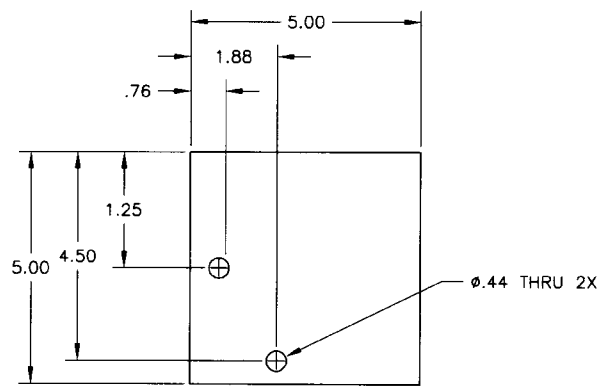
VIEW L–L
SCALE: 1/4
ROTATED 90° CCW
LEFT FRAME RAIL ONLY
SHOWN FOR CLARITY



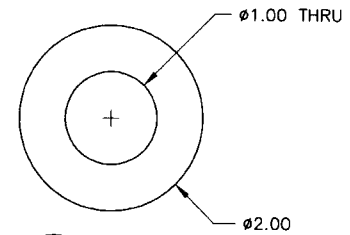
12 DETAIL
SCALE: 1/2



VIEW K–K
SCALE: 1/4
ROTATED 90° CCW
RIGHT FRAME RAIL AND BATTERY BOX ONLY
SHOWN FOR CLARITY



13 DETAIL
SCALE: 1/2



15 DETAIL
SCALE: 1/1

SIZE	CAGE CODE	INDEX CODE NUMBER				DWG-519931	REV
		AREA	TYPE	CL	ORIG		
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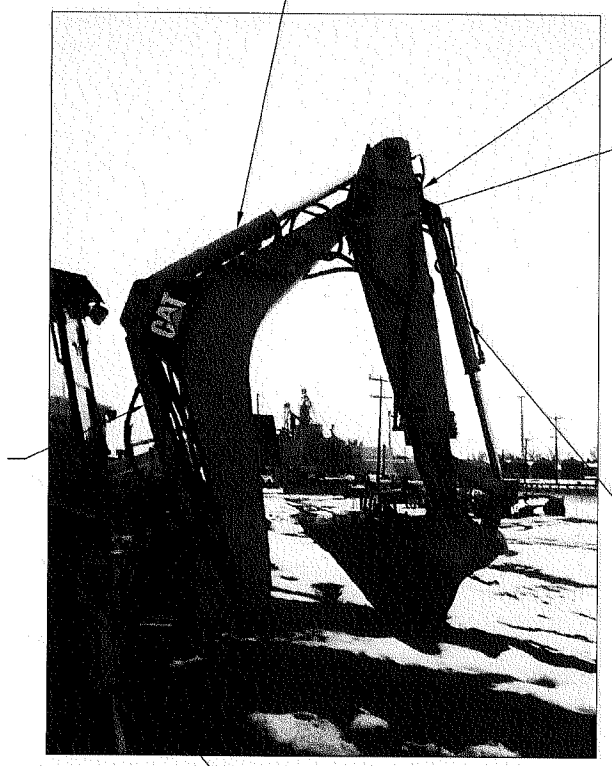
SCALE: NOTED						SHEET 6	



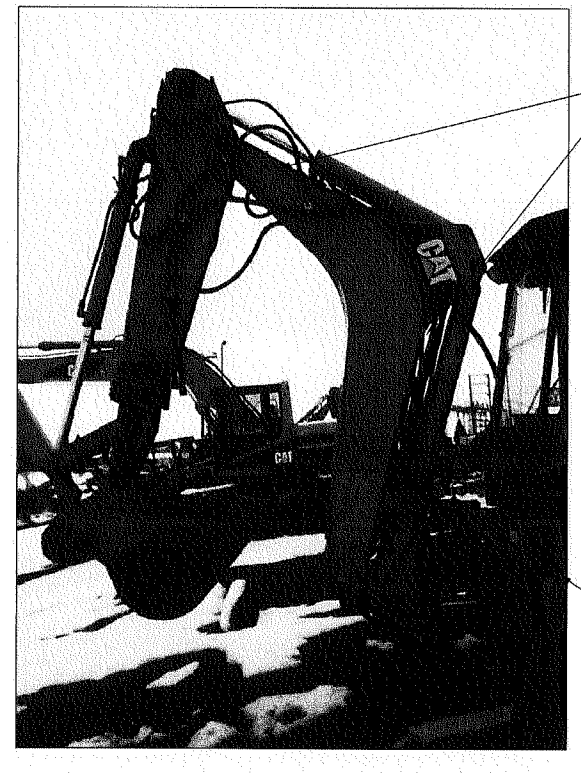
(65) 2X
(66)
(67)

ROUTE NEW ITEM 65 (5/8" TFE HYDRAULIC HOSE) ON THIS SIDE OF BOOM AND STICK. FABRICATE 2 HOSES FOR COUPLER SYSTEM. FIRST HOSE, ITEM 65, FROM SEAL TO END OF BOOM APPROX. 165 INCHES LONG. SECOND HOSE, ITEM 65, FROM END OF BOOM TO COUPLER APPROX. 203 INCHES LONG. CONNECT HOSE END TOGETHER WITH ITEM 66. CONNECT TO COUPLER CYLINDER USING ITEM 67. ATTACH PER WAIN ROY INSTALLATION RECOMMENDATIONS.

(65) 2X
(68) 2X
(69)
(83)

LH SWING CYLINDER HOSE ASSY'S 8Y-8696 (28.7 INCHES LG.) AND 8W-6812 (35 INCHES LG.) TO BE REPLACED WITH ITEM 65 (5/8" TFE HYDRAULIC HOSE). HOSE ASSY 8W-6812 WILL BE ROUTED FROM A BULKHEAD CONNECTOR AT SEAL AND WILL REQUIRE SHORTENING (ESTIMATED LENGTH IS 30 INCHES). FIELD VERIFY LENGTH NEEDED AND PROVIDE NYLON ABRASION SLEEVE PROTECTION (ITEM 83) ON BOTH HOSE ASSY'S. CONNECT NEW HOSES TO HYDRAULIC CYLINDERS USING ITEMS 68 AND 69.

PHOTO 1



(65) 4X
(66) 2X
(70) 2X
(71)
(72)

ROUTE 2 NEW AUXILIARY HYDRAULIC HOSES ITEMS 65 ON THIS SIDE OF BOOM AND STICK. FOLLOW WAIN ROY INSTALLATION RECOMMENDATIONS FOR AUXILIARY HOSE ROUTING ON CLAM BUCKET. CONNECT HOSES TOGETHER (2 HOSES 165" LG. AND 2 HOSES 203" LG.) USING ITEMS 66. INSTALL QUICK DISCONNECT ITEMS 71 AND 72 USING ITEMS 70.

(65) 2X
(68) 2X
(69)
(83)

RH SWING CYLINDER HOSE ASSY'S 8Y-8696 (28.7 INCHES LG.) AND 8W-6812 (35 INCHES LG.) TO BE REPLACED WITH ITEM 65 (5/8" TFE HYDRAULIC HOSE). HOSE ASSY 8W-6812 WILL BE ROUTED FROM A BULKHEAD CONNECTOR AT SEAL AND WILL REQUIRE SHORTENING (ESTIMATED LENGTH IS 30 INCHES). FIELD VERIFY LENGTH NEEDED AND PROVIDE NYLON ABRASION SLEEVE PROTECTION (ITEM 83) ON BOTH HOSE ASSY'S. CONNECT NEW HOSES TO HYDRAULIC CYLINDERS USING ITEMS 68 AND 69.

PHOTO 2

Layout Name: Sheet 07
Date: 07/19/02 - 2:11 P.M.
ID: KJ1
File: 519931.dwg
Path: O:\Keller

SIZE	CAGE CODE	INDEX CODE NUMBER					DWG-	REV
		AREA	TYPE	CL	ORIG			
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SCALE: NONE						SHEET 7		

FMT-D2-REV 3.1

82 — REPLACE BOOM CYLINDER ORFS 90° FITTING 6V-9007 AT HEAD END WITH ITEM 82. TFE HOSE ONLY AVAILABLE WITH 37° JIC FITTINGS.

PHOTO 3

65, 73, 74 — E-STICK HOSE ASSY 9R-4638 (42.9 INCHES LG.). REPLACE WITH ITEM 65 (5/8" TFE HYDRAULIC HOSE). ROUTE NEW HOSE IN SAME MANNER. CONVERSION FITTINGS, ITEMS 73 AND 74, REQUIRED AT TUBE ASSY 9R-3903. TFE HOSE ONLY AVAILABLE IN 37° JIC FITTINGS. FRAME END OF HOSE 9R-4638 TO BE CONNECTED TO BULKHEAD FITTING THROUGH SEAL. HOSE WILL REQUIRE SHORTENING DUE TO ADDITIONAL CONNECTION FITTINGS AND SEAL.

65, 77, 78 — BUCKET HOSE ASSY 9R-5947 (144.5 INCHES LG.). REPLACE WITH ITEM 65 (5/8" TFE HYDRAULIC HOSE). ROUTE NEW HOSE IN SAME MANNER. FRAME END OF HOSE TO BE CONNECTED TO BULKHEAD FITTING THROUGH SEAL. HOSE WILL NEED TO BE SHORTENED DUE TO ADDITIONAL CONNECTION FITTINGS AND SEAL. CONVERSION FITTINGS, ITEMS 77 AND 78, REQUIRED AT TUBE ASSY 9R-4057. TFE HOSE ONLY AVAILABLE WITH 37° JIC FITTINGS.

80, 81 — INSTALL BOOM LOCK CHECK VALVE, ITEM 80, AS SHOWN. RECOMMENDED INSTALLATION LOCATION IS 22 INCHES FROM BOOM MOUNT PIN CENTERLINE. INSTALL ITEMS 81 IN ALL FOUR PORTS OF ITEM 80. FLOW RESTRICTION REQUIRED, SEE NOTE 1.

65 — BOOM HYDRAULIC CYLINDER HOSE ASSY'S 9R-4608 (120 INCHES LG.) AND 9R-4609 (120 INCHES LG.) TO BE REPLACED AND CUT INTO TWO HOSE LENGTHS. INSTALL TWO NEW ITEMS 65 (5/8" TFE HYDRAULIC HOSE) FROM SEAL TO LOCK CHECK VALVE, ITEM 80 (ESTIMATED LENGTH IS 62 INCHES). FIELD VERIFY LENGTH. ROUTE SECOND SET OF HOSES, ITEMS 65, FROM LOCK CHECK VALVE, ITEM 80, TO CYLINDER (ESTIMATED LENGTH IS 58 INCHES). FIELD VERIFY LENGTH.

83 — PROVIDE NYLON SLEEVE PROTECTION, ITEM 83, ON ALL HOSES FOR ROUTING THROUGH SWING FRAME TO PREVENT CHAFFING.

83 — ROUTE NEW BOOM CYLINDER HOSES OUTSIDE OF BOOM AFTER ROUTING THROUGH SWING FRAME. PROVIDE NYLON SLEEVE PROTECTION, ITEM 83, ON NEW LINES.

PHOTO 4

77, 78 — CONVERSION FITTINGS, ITEMS 77 AND 78, WILL BE REQUIRED AT CONNECTION TO TUBE ASSY 9R-5046 ON BOOM. TFE HOSE ONLY AVAILABLE WITH 37° JIC FITTINGS.

65, 73, 74 — E-STICK HOSE ASSY 9R-4638 (142.9 INCHES LG.). REPLACE WITH ITEM 65 (5/8" TFE HYDRAULIC HOSE). ROUTE NEW HOSE IN SAME MANNER. FRAME END OF HOSE TO BE CONNECTED WITH BULKHEAD FITTING THROUGH SEAL. CONVERSION FITTINGS, ITEMS 73 AND 74, REQUIRED AT TUBE ASSY 9R-3904. TFE HOSE ONLY AVAILABLE IN 37° JIC FITTINGS. HOSE WILL REQUIRE SHORTENING DUE TO ADDITIONAL FITTING CONNECTIONS AND SEAL. FIELD VERIFY LENGTHS.

4X 65 — STICK HYDRAULIC CYLINDER HOSE ASSYS 9R-957 (167 INCHES LG.) AND 9R-5676 (133 INCHES LG.) TO BE REPLACED AND CUT INTO TWO HOSE LENGTHS. INSTALL TWO NEW ITEMS 65 (5/8" TFE HYDRAULIC HOSE) FROM SEAL TO LOCK CHECK VALVE, ITEM 80, (ESTIMATED LENGTH IS 62 INCHES). FIELD VERIFY LENGTH. ROUTE SECOND SET OF HOSES, ITEMS 65, FROM LOCK CHECK VALVE, ITEM 80, TO HEAD END OF STICK CYLINDER (ESTIMATED LENGTH IS 71 INCHES) AND FROM LOCK CHECK VALVE, ITEM 80, TO STICK CYLINDER ROD END (ESTIMATED LENGTH IS 105 INCHES).

65, 77, 78 — BUCKET HOSE ASSY 9R-5497 (144.5 INCHES LG.). REPLACE WITH ITEM 65 (5/8" TFE HYDRAULIC HOSE). ROUTE NEW HOSE IN SAME MANNER. FRAME END OF HOSE TO BE CONNECTED TO BULKHEAD FITTING THROUGH SEAL. CONVERSION FITTINGS, ITEMS 77 AND 78, REQUIRED AT TUBE ASSY 9R-4056. TFE HOSE ONLY AVAILABLE IN 37° JIC FITTINGS. HOSE WILL NEED TO BE SHORTENED DUE TO ADDITIONAL CONNECTION FITTINGS AND SEAL. FIELD VERIFY LENGTH.

83 — ROUTE NEW STICK CYLINDER HOSES OUTSIDE OF BOOM AFTER ROUTING THROUGH SWING FRAME. PROVIDE NYLON SLEEVE PROTECTION, ITEM 83, ON NEW LINES.

80, 81 4X — INSTALL STICK LOCK CHECK VALVE, ITEM 80, AS SHOWN. RECOMMENDED INSTALLATION LOCATION IS 22 INCHES FROM BOOM MOUNT PIN CENTERLINE. INSTALL ITEMS 81 IN ALL FOUR PORTS OF ITEM 80. FLOW RESTRICTION REQUIRED, SEE NOTE 1.

83 — PROVIDE NYLON SLEEVE PROTECTION, ITEM 83, ON ALL HOSES ROUTED THROUGH SWING FRAME TO PREVENT CHAFFING

SIZE	CAGE CODE	INDEX CODE NUMBER				DWG-	REV
		AREA	TYPE	CL	ORIG		
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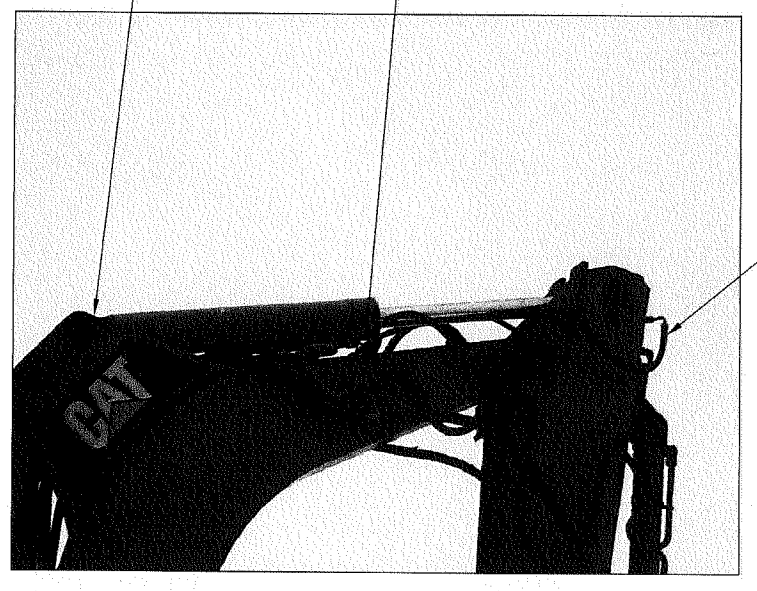
SCALE: NONE — SHEET 8

Layout Name: Sheet 08
Date: 07/19/02 – 2:11 P.M.
ID: KJ1

File: 519931.dwg
Path: D:\Keller

(70) REPLACE HEAD END OF STICK CYLINDER ORFS FITTING 148-8327 WITH ITEM 70. TFE HOSE ONLY AVAILABLE WITH 37° JIC FITTING.

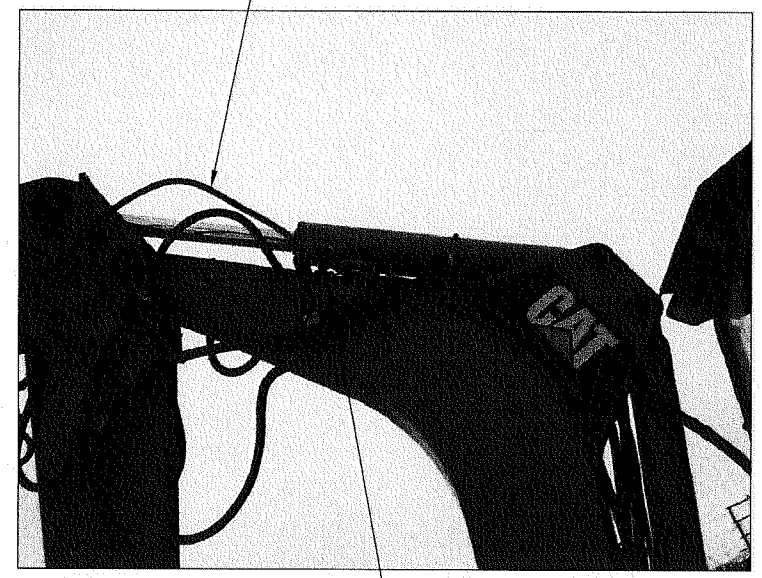
TUBE ASSY 9R-3903



(65) (75) 2X E-STICK HOSE ASSY 122-9967 (50 INCHES LG.). REPLACE WITH ITEM 65 (5/8" TFE HYDRAULIC HOSE). ROUTE NEW HOSE IN SAME MANNER. CONVERSION FITTING, ITEM 75, REQUIRED AT TUBE ASSY 131-7871 AND 9R3903. TFE HOSE ONLY AVAILABLE IN 37° JIC FITTINGS. FIELD VERIFY LENGTH.

PHOTO 5

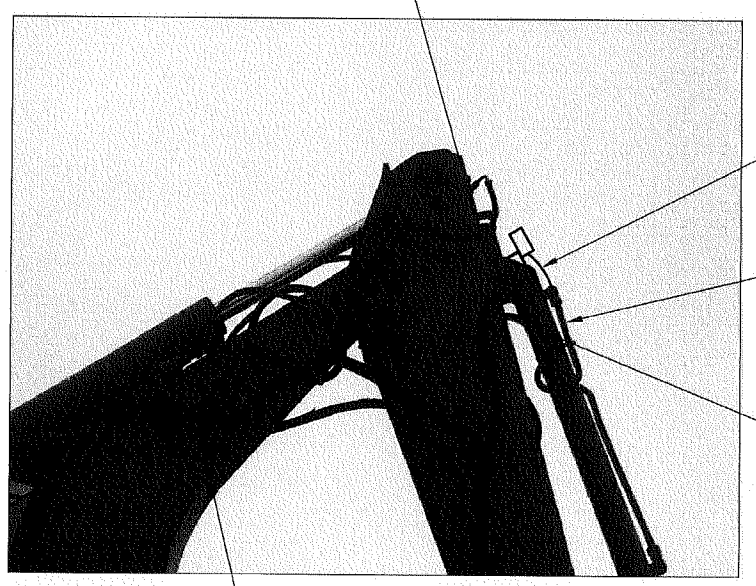
(65) (75) (76) E-STICK HOSE ASSY 122-9967 (50 INCHES LG.). REPLACE WITH ITEM 65 (5/8" TFE HYDRAULIC HOSE). ROUTE NEW HOSE IN SAME MANNER. CONVERSION FITTING, ITEM 75, REQUIRED AT TUBE ASSY 9R-3904. REPLACE EXTENDABLE STICK HEAD END CYLINDER FITTING ASSY 148-8390 WITH ITEM 76.



(70) REPLACE STICK CYLINDER ROD END ORFS FITTING 148-8327 WITH ITEM 70. TFE HOSE ONLY AVAILABLE IN 37° JIC FITTING

PHOTO 6

(65) BUCKET HOSE ASSY 9R-5637 (97 INCHES LG.). REPLACE WITH ITEM 65 (5/8" TFE HYDRAULIC HOSE). ROUTE NEW HOSE IN SAME MANNER. HOSE MAY NEED TO BE SHORTENED DUE TO ADDITIONAL CONNECTION FITTINGS. FIELD VERIFY LENGTH. CONNECT HOSE TO LOCK CHECK VALVE ITEM 80.



(65) TFE HOSE ASSY ITEM 65 REQUIRED BETWEEN LOCK CHECK VALVE AND BUCKET CYLINDER FIELD VERIFY LENGTH REQUIRED.

TUBE ASSY 9R-5632

(77) (78) (79) CONVERSION FITTINGS, ITEMS 77, 78 AND 79 REQUIRED AT TUBE ASSY 9R-5632. TFE HOSE ONLY AVAILABLE IN 37° JIC.

(77) (78) CONVERSION FITTINGS, ITEMS 77 AND 78 REQUIRED AT TUBE ASSY 9R-4057

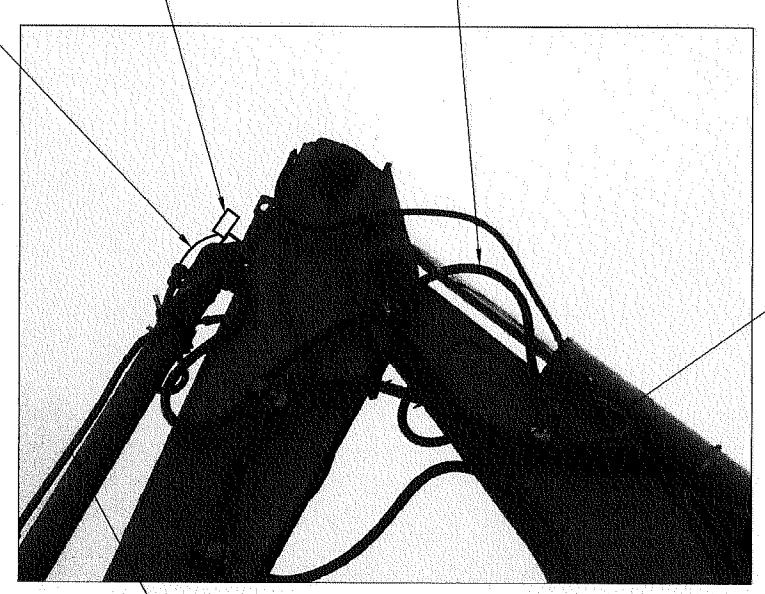
PHOTO 7

INSTALL LOCK CHECK VALVE ON ANGLE SUPPORT WELDED TO BUCKET CYLINDER PIN CONNECTION AS SHOWN. INSTALL SUPPORT ANGLE AS NEEDED FOR SUPPORT OF ITEM 80. INSTALL ITEMS 81 IN ITEM 80. FLOW RESTRICTION REQUIRED ON ROD SIDE OF BUCKET CYLINDER, SEE NOTE 1.

(80) 4X (81)

(65) TFE HOSE ASSY ITEM 65 REQUIRED BETWEEN LOCK CHECK VALVE AND BUCKET CYLINDER FIELD VERIFY LENGTH REQUIRED.

(65) BUCKET HOSE ASSY 9R-5637 (97 INCHES LG.). REPLACE WITH ITEM 65 (5/8" TFE HYDRAULIC HOSE). ROUTE NEW HOSE IN SAME MANNER. HOSE MAY NEED TO BE SHORTENED DUE TO ADDITIONAL CONNECTION FITTINGS. FIELD VERIFY LENGTH. CONNECT HOSE TO LOCK VALVE ITEM 80.



(77) (78) CONVERSION FITTINGS, ITEMS 77 AND 78 REQUIRED AT TUBE ASSY 9R-4056

(77) (78) (79) CONVERSION FITTINGS, ITEMS 77, 78 AND 79 REQUIRED AT TUBE ASSY 9R-5631. TFE HOSE ONLY AVAILABLE IN 37° JIC

PHOTO 8

SIZE	CAGE CODE	INDEX CODE NUMBER					REV
		AREA	TYPE	CL	ORIG		
D	01MF3	098	0671	41	090	DWG-519931	1
SCALE: NONE						SHEET 9	

File: 519931.dwg
Path: D:\Keller
Layout Name: Sheet 09
Date: 07/19/02 - 2:11 P.M.
ID: KJ1

REMOVE TILT CYLINDER AND LOADER BUCKET LINKS

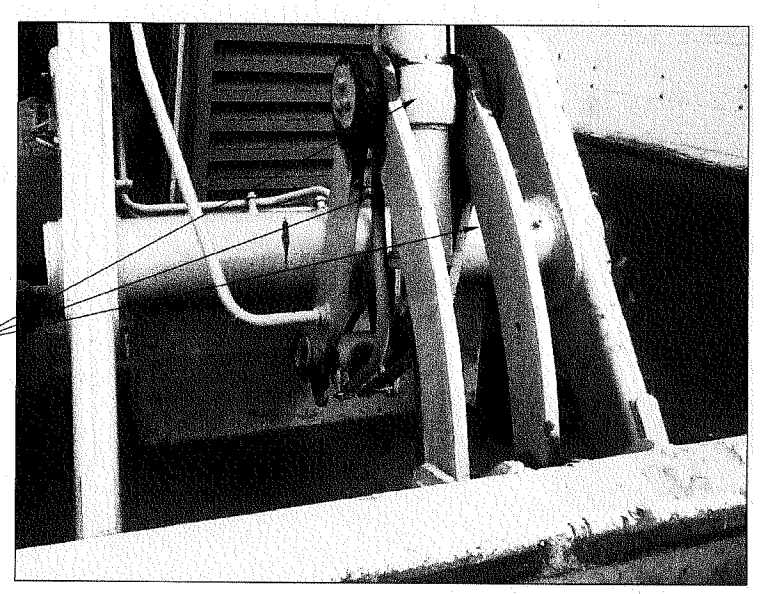
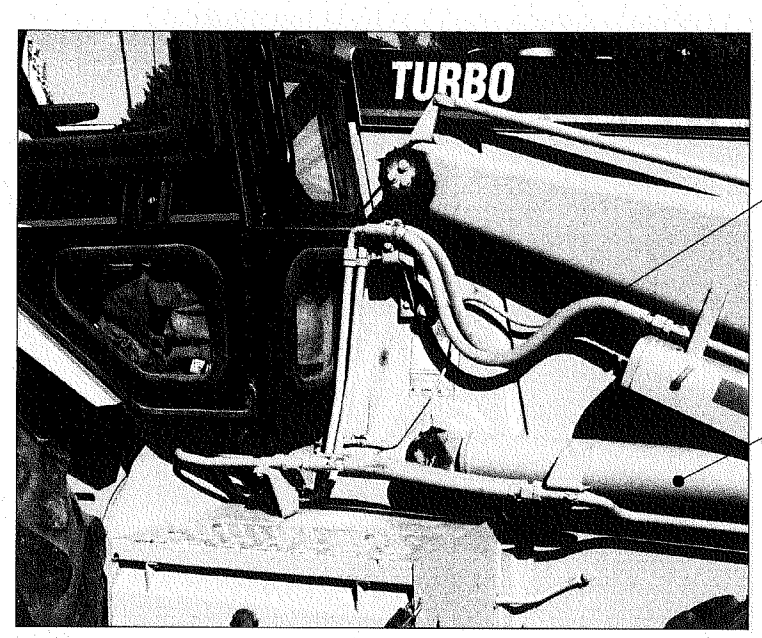


PHOTO 9



DISCONNECT AND CAP TILT CYLINDER SUPPLY AND RETURN LINES TO LOADER VALVE GROUP. REMOVE TILT CYLINDER LINES FROM LIFT GROUP TO LOADER TILT CYLINDERS.

(62) (63) REMOVE LOADER CYLINDERS AND CAP LINES USING ITEMS 62 AND 63. INSTALL ITEM 5 SO THAT LOADER ARM IS 24.0 ABOVE GRADE

PHOTO 10

REMOVE LOADER CYLINDERS AND CAP LINES USING ITEMS 62 AND 63. INSTALL ITEM 5 SO THAT LOADER ARM IS 24.0 ABOVE GRADE

(62) (63)

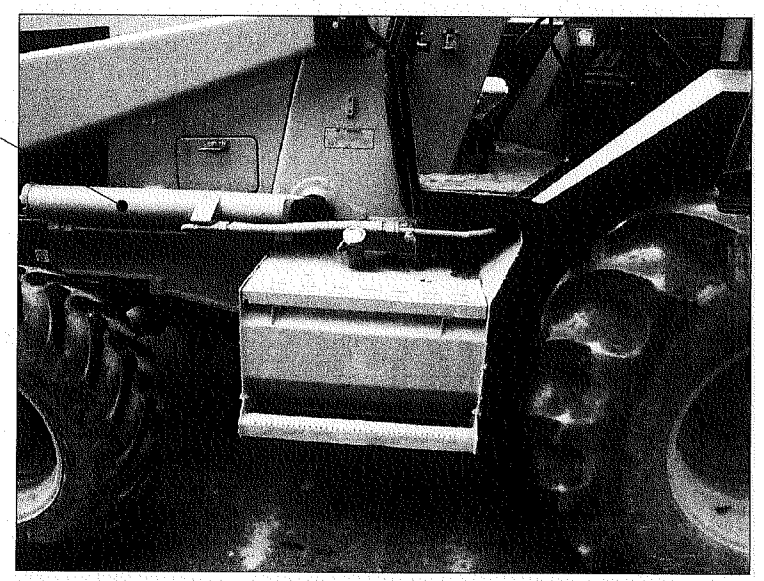


PHOTO 11

SIZE	CAGE CODE	INDEX CODE NUMBER				DWG-	REV
		AREA	TYPE	CL	ORIG		
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SCALE: NONE					SHEET	10	

INSTALL 5 POINT GREASE DISTRIBUTION BLOCK FOR BUCKET LINKAGE SYSTEM

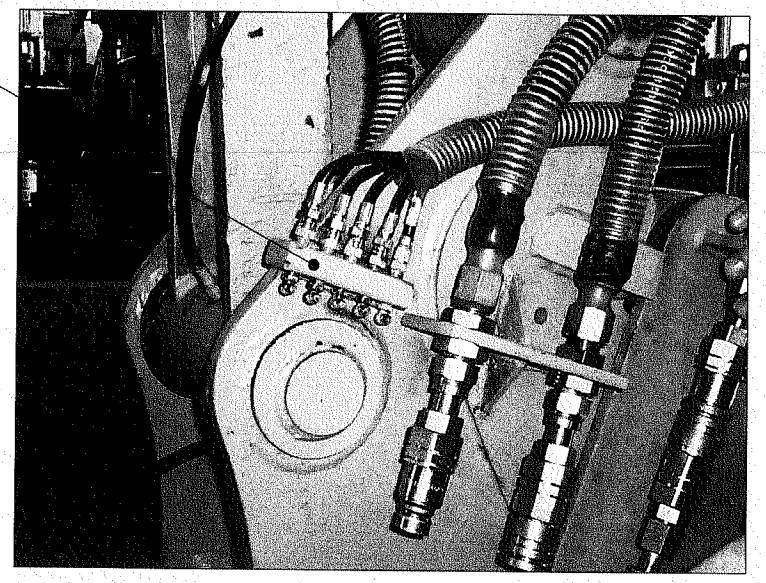
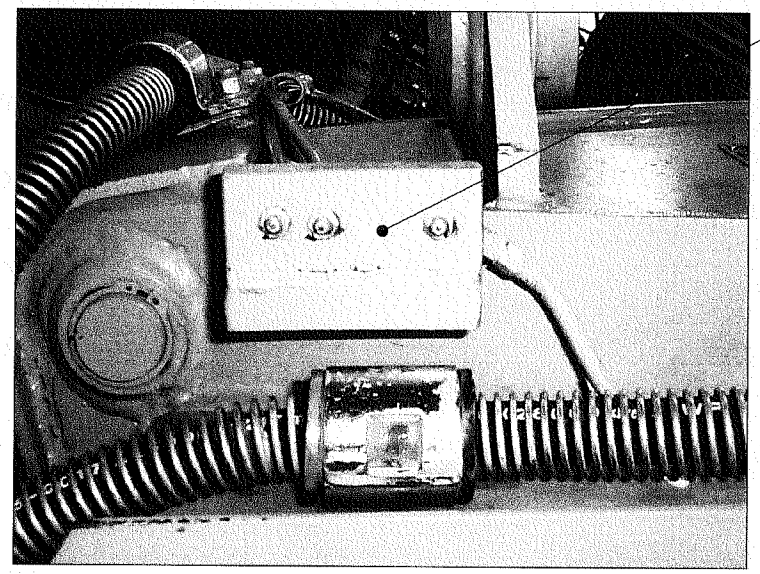


PHOTO 12



INSTALL 3 POINT GREASE DISTRIBUTION BLOCK FOR JAW BUCKET LINKAGE SYSTEM

PHOTO 13

File: 519931.dwg
Path: D:\Keller
ID: KJ1
Layout Name: Sheet 11
Date: 07/19/02 - 2:12 P.M.

SIZE	CAGE CODE	INDEX CODE NUMBER					DWG-	REV
		AREA	TYPE	CI	CRIC			
D	01MF3	098	0671	41	090		519931	1
SCALE: NONE						SHEET 11		

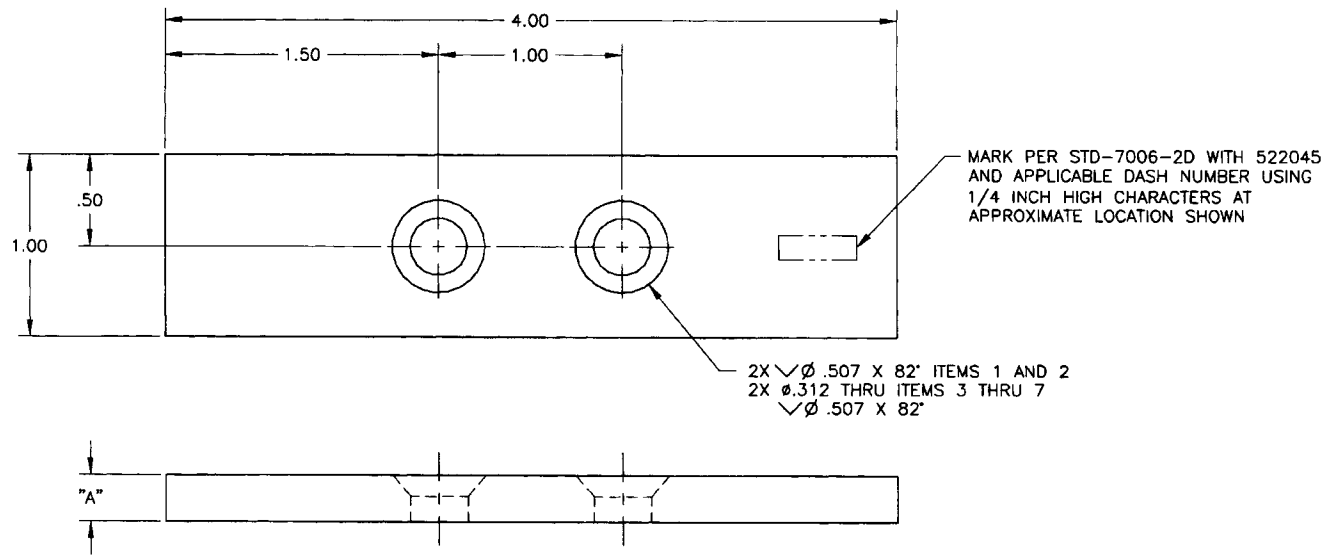
7) DWG: 522045

FMT-01-REV 3.3

REVISIONS		
REV	DESCRIPTION	EFFECTIVE DATE:

NOTES:

1. REMOVE ALL BURRS AND SHARP EDGES.



(1) THRU (6) DETAIL SIMILAR
(7) DETAIL SHOWN

DASH NO.	DIM "A"
-1	.06
-2	.09
-3	.13
-4	.16
-5	.19
-6	.22
-7	.25

QTY REQD	SAFETY CAT.	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	MATERIAL/SPECIFICATION OR VENDOR NAME	ITEM NO.
	SS	-7	SWING STOP SHIM	PLATE, 1/4 THK AISI 1045	7
	SS	-6			6
	SS	-5			5
	SS	-4			4
	SS	-3			3
	SS	-2			2
	SS	-1			1
-1					

PARTS LIST

APPLICATION		DASH NO.	NEXT ASSY
		-5	519933
		-5	519903
		-4	519933
-7	519933	-3	519933
-7	519903	-2	519933
-6	519933	-2	519903
-6	519903	-1	519933

DIMENSIONING AND SYMBOLOGY ARE AMERICAN NATIONAL STANDARD UNLESS OTHERWISE SPECIFIED
SURFACE ROUGHNESS 125/
DIMENSIONS AND TOLERANCES ARE IN INCHES
TOLERANCES: DECIMALS: X = ± .1, .XX = ± .03, .XXX = ± .010
FRACTIONS ± 1/8
ANGULAR ± 2°
DO NOT SCALE DRAWING

PROFESSIONAL ENGINEER REGISTERED 9408 7-11-2002 STATE OF IDAHO BLAIR K. GROVER

SUBCONTRACT NO.
REQUESTER: S.A. DAVIES
DESIGN: B. GROVER
DRAWN: Chris Zoeller
PROJECT NO. 021052
SPEC CODE
FOR REVIEW/APPROVAL SIGNATURES
SEE DAR NO. 93345
EFFECTIVE DATE: 7/11/2002

INEEL — Idaho National Engineering & Environmental Laboratory — BECHTEL BWXT IDAHO, LLC

OU 7-10
GLOVEBOX EXCAVATOR METHOD PROJECT
EXCAVATOR MODIFICATIONS
SWING STOP SHIM DETAILS

SIZE	CAGE CODE	INDEX CODE NUMBER				DWG- 522045	REV
		AREA	TYPE	Q	ORG		
D	01MF3	098	0671	41	090		

SCALE: 2/1 SHEET 1 OF 1

Layout Name: Sheet 1 ID: KJ1
Date: 07/10/02 - 09:22 A.M.
File: 522045.dwg
Path: O:\Keller